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# 1. INTRODUCTION AND EXECUTIVE SUMMARY

This document is a program-level Draft Environmental Impact Report (Draft EIR) for the Los Angeles International Airport (LAX) Specific Plan Amendment Study (SPAS). LAX is owned and operated by the City of Los Angeles, whose Board of Airport Commissioners (BOAC) oversees the policy, management, operation, and regulation of LAX, as well as LA/Ontario International Airport and Van Nuys Airport. Los Angeles World Airports (LAWA) is a self-supporting administrative department of the City of Los Angeles charged with administering the day-to-day operations of LAX. This Draft EIR, which addresses the LAX SPAS as the proposed project, has been prepared by LAWA as the lead agency in conformance with the California Environmental Quality Act (CEQA).<sup>1</sup>

The study area for the project is located at LAX, situated within the City of Los Angeles and Los Angeles County. As depicted in **Figure 1-1**, LAX is bordered by the communities of Westchester and Playa del Rey (part of the City of Los Angeles), the City of El Segundo, the City of Inglewood, the unincorporated community of Lennox, Dockweiler State Beach, and the Pacific Ocean. The airport is located approximately 12 miles southwest of downtown Los Angeles. **Figure 1-2** provides an aerial view of the existing airport.

## 1.1 Project Background

### 1.1.1 LAX Master Plan and EIR

In December 2004, the Los Angeles City Council approved the LAX Master Plan<sup>2</sup> and related entitlements for the future development of LAX. The LAX Master Plan provides the first major new facilities for, and improvements to, the airport since 1984, and plans to accommodate projected growth in passengers and cargo at LAX through the year 2015. The LAX Master Plan serves as a broad policy statement regarding the conceptual strategic planning framework for future improvements at LAX and working guidelines to be consulted by LAWA as it formulates and processes site-specific projects under the LAX Master Plan program. The LAX Master Plan provides for modernization of the runway and taxiway system, redevelopment of the terminal area, improvement of access to the airport, and enhancement of passenger safety, security, and convenience. Key improvements under the LAX Master Plan are identified and depicted in **Figure 1-3**.

The formulation of the LAX Master Plan was completed in three main phases and included an exhaustive iterative process during which LAWA reviewed a wide range of alternatives before selecting a preferred development program known as Alternative D. A brief summary of each of the three main phases is provided below.

- ◆ **Research (Phase I):** During this phase of the study, completed in December 1995, existing airport conditions at that time were defined, future demand was estimated, and the public consultation process was initiated. It was estimated that the unconstrained demand for air service at LAX by 2015 would be 98 million annual passengers (MAP) and 4.2 million annual tons of cargo. During this phase, the LAX Master Plan preparation process extensively analyzed existing and projected future activity levels at the airport. (Please also see Chapter 2 of the LAX Master Plan Final EIR and Chapter 3 of the Draft LAX Master Plan.)
- ◆ **Concept Development (Phase II):** This study phase was initiated in the fall of 1995 to evaluate facility requirements and to develop an airport layout for LAX to serve, in whole or in part, the forecast passenger and cargo demand. The concept development process involved policy decisions and design tradeoffs that spanned more than five years and included dozens of options to identify the best balance possible to serve the airport needs of the region and those of the differing stakeholders. As

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<sup>1</sup> California Environmental Quality Act, Public Resources Code Section 21000, et seq.

<sup>2</sup> City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004.

## 1. Introduction and Executive Summary

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the process progressed, agency and public meetings and workshops were held to inform concerned parties of the progress and findings of the study and encourage participation in the process. As a result of public input, two of the initial four concepts were eliminated, and others were put forward. Three "build" alternatives and the No Action/No Project Alternative were initially moved forward to the third and final phase of the LAX Master Plan process and a fourth build alternative was later added to the process, following the events of September 11, 2001.

- ◆ Environmental Review and Approval (Phase III): Phase III of the LAX Master Plan Study included a thorough evaluation of the potential environmental effects associated with the four build alternatives, in accordance with federal and State of California environmental review procedures. The environmental review process was conducted as a joint Environmental Impact Statement (EIS), under federal environmental law, and Environmental Impact Report (EIR), under California law. The EIS/EIR provided descriptions of the environmental conditions in and around LAX, analyzed the potential impacts of the improvements associated with each alternative on the physical environment, and recommended mitigation measures to address potential impacts. The Draft EIS/EIR, addressing three build alternatives and the No Action/No Project Alternative, was released for public and agency review in January 2001, and the Supplement to the Draft EIS/EIR, addressing the fourth build alternative (Alternative D), was released for public and agency review in July 2003.

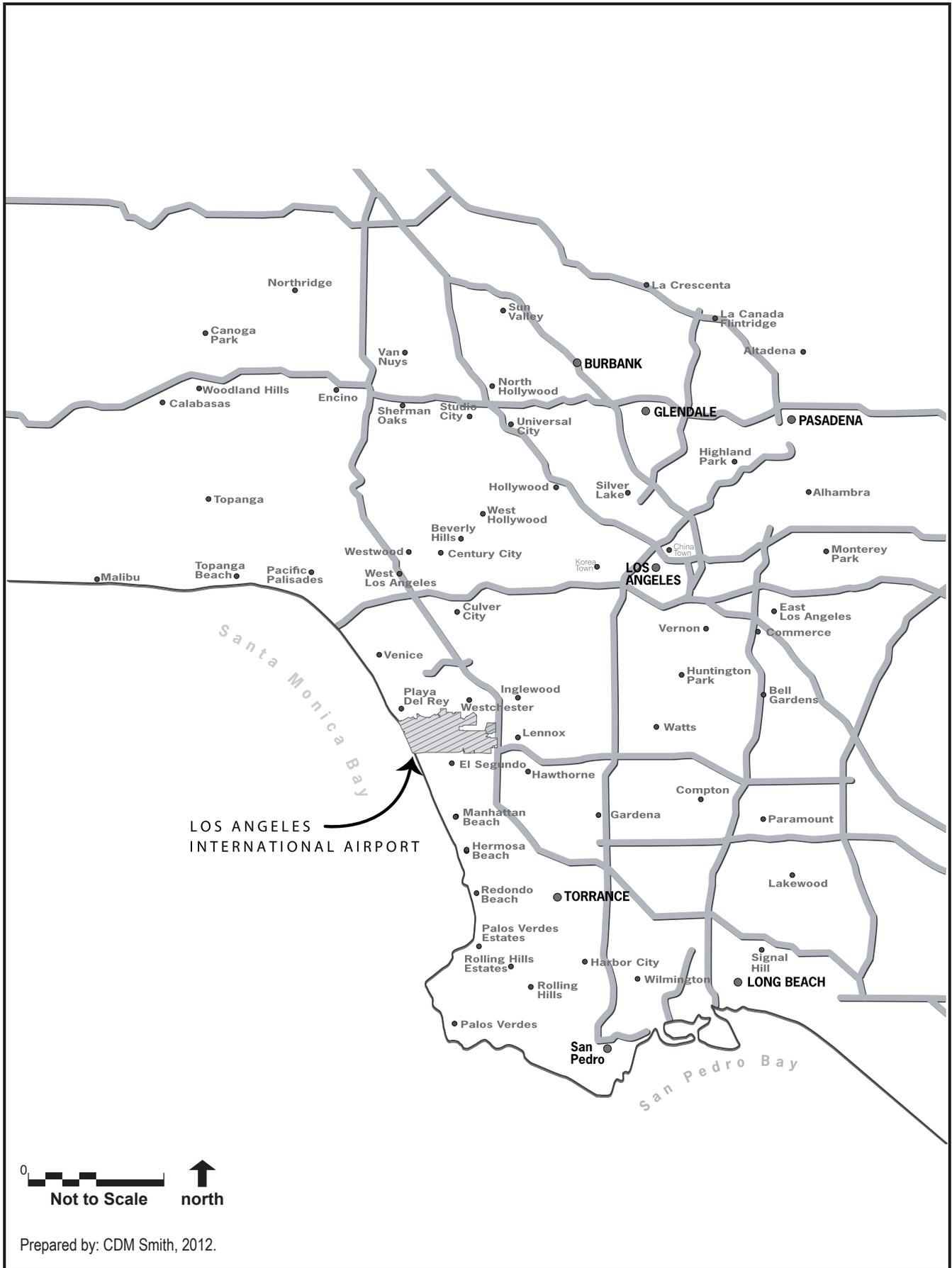
The LAX Master Plan Final EIR,<sup>3</sup> which addressed four build alternatives and the No Action/No Project Alternative, was developed on the basis of the Draft EIS/EIR, the Supplement to the Draft EIS/EIR, public and agency comments received on both documents, and written responses to those comments. The LAX Master Plan Final EIR, as well as the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP) identifying LAX Master Plan mitigation measures and commitments, were published in April 2004. A revised MMRP and an Addendum to the LAX Master Plan Final EIR were published in September 2004. Three additional LAX Master Plan addenda were published in early December 2004, prior to certification of the LAX Master Plan Final EIR by the Los Angeles City Council on December 7, 2004.

### 1.1.2 The Stipulated Settlement

In January 2005, the City of El Segundo, the City of Inglewood, the City of Culver City, the County of Los Angeles, and the Alliance for a Regional Solution to Airport Congestion (Petitioners) filed petitions challenging the approval of the LAX Master Plan Program. In early 2006, the City of Los Angeles and Petitioners agreed to, and the court approved, a Stipulated Settlement of the subject lawsuits (Stipulated Settlement).

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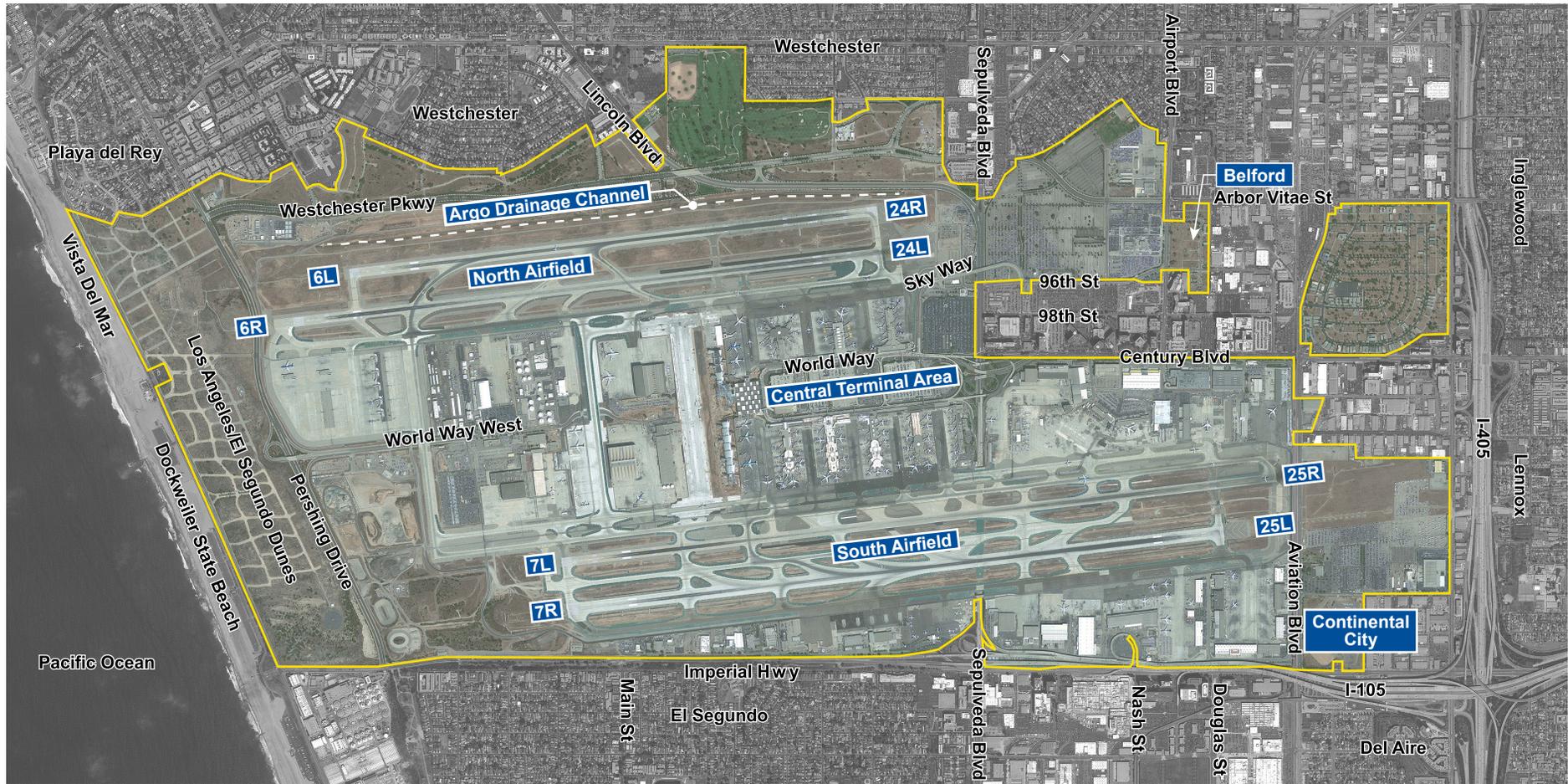
<sup>3</sup> City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004.



## ***1. Introduction and Executive Summary***

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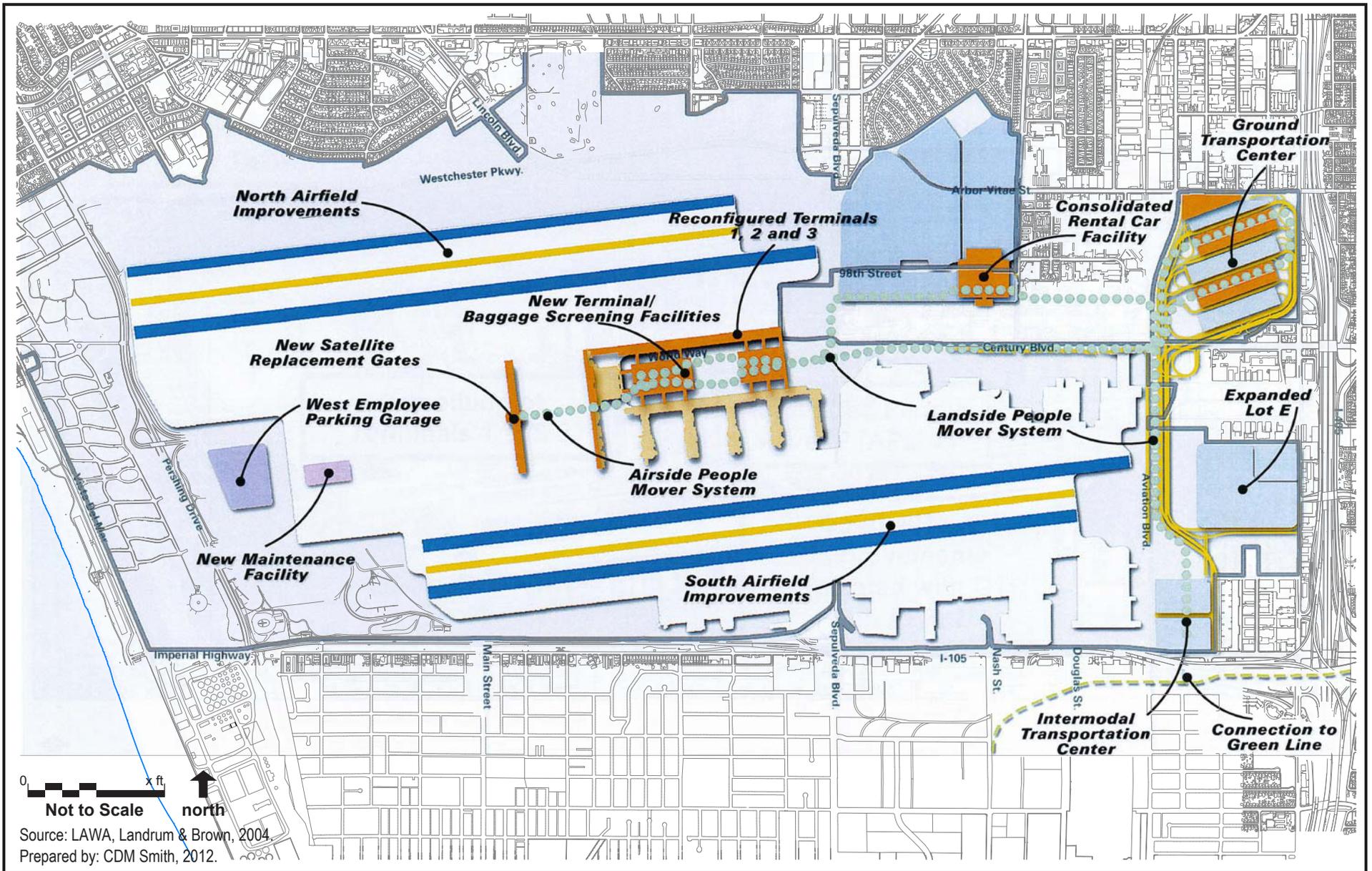


Source: Los Angeles World Airports, 2011.  
Prepared by: CDM Smith, 2012.

**1. Introduction and Executive Summary**

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**1. Introduction and Executive Summary**

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## 1. Introduction and Executive Summary

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Section V of the Stipulated Settlement requires LAWA to undertake a Specific Plan Amendment Study to fulfill the intent of Section 7.H of the LAX Specific Plan,<sup>4</sup> approved in December 2004 as part of the LAX Master Plan Program.<sup>5</sup> The LAX Specific Plan establishes zoning and land use regulations and procedures for the processing of future specific projects and activities anticipated under the LAX Master Plan Program to ensure consistency with the LAX Plan - the City of Los Angeles' general plan component for LAX - and to ensure the adequacy of environmental review and documentation of those individual projects. Section 7.H of the LAX Specific Plan requires completion of a Specific Plan Amendment Study prior to seeking a determination of compliance with the LAX Plan for the following projects:

- ◆ Development of the Ground Transportation Center (GTC), including the baggage tunnel, associated structures, and equipment;
- ◆ Construction of the Automated People Mover (APM) 2 from the GTC to the Central Terminal Area (CTA), including its stations and related facilities and equipment;
- ◆ Demolition of CTA Terminals 1, 2, and 3;
- ◆ North Runway re-configuration as contemplated in the LAX Master Plan, including center taxiways; and
- ◆ On-site road improvements associated with development of the GTC and construction of APM 2.

These projects are referred to as the "Yellow Light Projects."<sup>6</sup> Pursuant to the Stipulated Settlement, and in accordance with the LAX Specific Plan, LAWA is proceeding with the LAX SPAS process to, consistent with previous local and federal approvals, identify Specific Plan amendments that plan for the modernization and improvement of LAX in a manner that is designed for a practical capacity of 78.9 MAP while enhancing safety and security, minimizing environmental impacts on the surrounding communities, and creating conditions that encourage airlines to go to other airports in the region, particularly those owned and operated by LAWA. In compliance with the Stipulated Settlement, the SPAS focuses on the following:

1. Potential alternative designs, technologies, and configurations for the LAX Master Plan Program that would provide solutions to the problems that the Yellow Light Projects were designed to address, consistent with a practical capacity of LAX at 78.9 MAP (the Alternative Projects).
2. Security, traffic, and aviation activity of such alternative designs, technologies, and configurations for the Alternative Projects.
3. Potential environmental impacts that could result from replacement of the Yellow Light Projects with the Alternative Projects, and potential mitigation measures that could provide a comparable level of mitigation to that described for the Yellow Light Projects in the LAX Master Plan Program EIR.

The LAX Master Plan, LAX Specific Plan, and the Stipulated Settlement are available for review at [www.ourlax.org](http://www.ourlax.org).

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<sup>4</sup> City of Los Angeles, Los Angeles International Airport Specific Plan (Ordinance No. 176,345), September 29, 2004, as amended by Ordinance No. 179,148, August 24, 2007.

<sup>5</sup> As defined in the Stipulated Settlement, the "LAX Master Plan Program" means the entire program that comprises the approval by both the Los Angeles City Council and the Federal Aviation Administration (FAA) in its Record of Decision (ROD), and subsequent implementation of Alternative D (i.e., the approved LAX Master Plan), including the initial approval of all entitlements and other actions in conjunction with the Los Angeles City Council's approval of the LAX Master Plan. The LAX Master Plan Program includes subsequent LAWA, BOAC and/or City of Los Angeles approvals of all entitlements and other actions for any of the specific project components and activities that implement Alternative D.

<sup>6</sup> The Stipulated Settlement and the Specific Plan Amendment approved by BOAC and the Los Angeles City Council removed the West Satellite Concourse and associated APM segments from the original list of Yellow Light Projects. (Ordinance 179,148, August 24, 2007).

## 1.2 Summary of Proposed Project

The proposed project is the LAX SPAS. As noted above, the SPAS process involves the identification and evaluation of potential alternative designs, technologies, and configurations for the LAX Master Plan Program that would provide solutions to the problems that the Yellow Light Projects were designed to address. The SPAS process also includes identification of potential amendments to the LAX Specific Plan that plan for the modernization and improvement of LAX in a manner that is designed for a practical capacity of 78.9 MAP while enhancing safety and security, minimizing environmental impacts on the surrounding communities, and creating conditions that encourage airlines to go to other airports in the region, particularly those owned and operated by LAWA.

### 1.2.1 Project Objectives

The project is to complete a Specific Plan Amendment Study (SPAS) that fulfills Section 7.H of the LAX Specific Plan consistent with the definition of the SPAS set forth in the LAX Master Plan Stipulated Settlement. The objectives associated with completion of the SPAS process, including in the identification and evaluation of alternatives to the Yellow Light Projects, are described below.

#### 1. Provide North Airfield Improvements that Support the Safe and Efficient Movement of Aircraft at LAX

The runways and taxiways within the north airfield at LAX were designed and constructed in the late 1960s. The commercial aircraft fleet in operation at that time, and used as the basis for designing the airfield consisted of aircraft types that were substantially smaller and lighter than today's commercial aircraft. For example, the commercial aircraft fleet in operation in the late 1960s and 1970s was dominated by aircraft such as the Boeing 727. The Boeing 747 was introduced into commercial service in the early 1970s and soon became one of the most popular aircraft for international and long-distance flights, particularly at LAX. In October 2008, scheduled flight operations of the Airbus A380 began at LAX. Provided in **Table 1-1** below is comparison of the size and weight of the three subject aircraft.

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**Table 1-1**

**Aircraft Size Comparison**

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	<b>Boeing 727</b>	<b>Boeing 747-400</b>	<b>Airbus A380</b>
Wingspan	108'	195'	261'
Length	153'	231'	239'
Tail Height	34'	64'	79'
Maximum Takeoff Weight	200,000 lbs	833,000 lbs	1,235,000 lbs

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Source: Boeing, 2012 and Airbus, 2012. Boeing, Commercial Airplanes 727 Specifications, Available: <http://www.boeing.com/commercial/727family/product.html>, accessed January 2012; Boeing, Commercial Airplanes 747 Specifications, Available: [http://www.boeing.com/commercial/747family/pf/pf\\_domestic\\_prod.html](http://www.boeing.com/commercial/747family/pf/pf_domestic_prod.html), accessed January 2012; Airbus, A380 Dimensions and Key Data, Available: <http://www.airbus.com/aircraftfamilies/passengeraircraft/a380family/a380-800/specifications>, accessed January 2012.

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Existing problems associated with the outdated airfield design include, but are not limited to, the following:

- ◆ LAX does not have an airfield, in either the north complex or the south complex, that is fully designed for the largest aircraft types currently in service (i.e., Aircraft Design Group (ADG) V aircraft, such as the Boeing 747-400, and ADG VI aircraft, such as the Airbus A380).
- ◆ The north airfield configuration requires non-standard operating procedures, which are not optimal for safety and increase aircraft delay.

## 1. Introduction and Executive Summary

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- ◆ The primary north airfield departure runway (6R/24L) is too short for certain larger aircraft (e.g., fully-loaded Boeing 747-400) on long-haul flights, requiring those aircraft to taxi to the south airfield, resulting in less efficient operations and disproportionate environmental impacts.
- ◆ The outdated airfield design creates a situation where aircraft are at increased risk of hazards. Those hazards include potential collisions with other aircraft, such as when a landing aircraft might move in the path of a departing aircraft (incursion).<sup>7</sup> Other potential hazards include, but are not limited to, insufficient side-by-side passing clearances between certain types of aircraft arriving/departing on runways and aircraft on nearby taxiways. Such hazards contribute to the potential for conflicts between taxiing aircraft and ground vehicles on runways, taxiways, and nearby service roads.
- ◆ With one exception, the north airfield configuration does not comply with FAA Runway Safety Area (RSA) requirements.
- ◆ The north airfield high-speed taxiways are not in compliance with FAA Engineering Brief No. 75.
- ◆ The north airfield does not provide sufficient areas at the end of the runways for holding arriving flights and sequencing departing aircraft.
- ◆ The existing Runway Protection Zone (RPZ) associated with Runway 6L/24R includes residential uses.

In identifying and evaluating alternatives to the north airfield improvements called for in the LAX Master Plan, LAWA is seeking to provide north airfield improvements that support the safe and efficient movement of aircraft at LAX; specifically, such improvements:

- ◆ Are consistent with FAA design standards for the largest aircraft types currently in service and anticipated for the future (ADG V and VI aircraft) for all weather conditions;
- ◆ Minimize modifications of standards, waivers, or operational restrictions, all of which reduce airfield efficiency and level of service;
- ◆ Reduce the potential for airfield hazards, including incursions, and enhance the overall safety of airfield operations through runway and taxiway design;
- ◆ Accommodate a greater percentage of departing aircraft, thereby increasing airfield efficiency;
- ◆ Provide sufficient areas at the ends of the runways for holding arriving flights and sequencing departing aircraft; and
- ◆ Minimize or eliminate the extent to which Runway Protection Zones overlay residential areas.

## 2. Improve the Ground Access System at LAX to Better Accommodate Airport-Related Traffic, Especially as Related to the Central Terminal Area

Travelers, visitors, employees, vendors, and others utilizing the commercial passenger terminal at LAX, defined by the CTA, have various ground access options including private vehicles, transportation service providers (i.e., taxis, shuttles, limousines, etc.), and public transit. Ground access within the CTA, where departing and arriving passengers are dropped off and picked up at curbside or can park their vehicles, is provided by an upper-level roadway and a lower-level roadway that loop around the center of the CTA and connect with surface streets on the east side of the CTA. The subject roadway system poses a number of concerns relative to traffic flows including, but not limited to, the following:

- ◆ CTA roadway system design currently creates queuing, weaving, and conflict points at various locations that impede traffic flow;
- ◆ During peak travel times, inbound airport traffic currently extends out of the CTA roadways onto public streets and may worsen as airport activity returns and grows;

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<sup>7</sup> As further discussed in Section 4.7.2, *Safety*, a runway incursion is defined by FAA as "Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft."

## 1. Introduction and Executive Summary

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- ◆ Curbside demand is unevenly distributed, especially during peak periods, creating concentrations of passengers that are not accommodated by the existing curbside system;
- ◆ As cumulative regional traffic increases, there will be less time certainty for airport users without easy access to the airport from the regional transit system; and
- ◆ The roadway system is not designed to efficiently accommodate security screening of vehicles entering the CTA.

In identifying and evaluating alternatives to the ground access system delineated in the LAX Master Plan, particularly as related to the related Yellow Light Projects, LAWA is seeking to improve the ground access system at LAX to better accommodate airport-related traffic, especially within the CTA. In particular, LAWA is seeking to:

- ◆ Design CTA roadway segments and curbside areas that reduce traffic "bottlenecks" and congestion;
- ◆ Reduce the volume of private vehicles accessing the CTA by reconfiguring and developing airport facilities that allow for alternative drop off and pick up of passengers outside the CTA;
- ◆ Reduce roadway congestion and improve performance and reliability of the airport ground transportation system by providing a grade-separated/dedicated transportation system that connects airport and transit facilities to the CTA; and
- ◆ Integrate LAWA's ground access system improvements with regional transit facilities nearby, including the recently approved Metro Crenshaw/LAX Transit Corridor and Station.

### 3. Maintain LAX's Position as the Premier International Gateway in Supporting and Advancing the Economic Growth and Vitality of the Los Angeles Region

LAX serves a key role in the region's economy, particularly as related to LAX's position as the international gateway for the western United States. According to a study completed in 2007 by the Los Angeles Economic Development Corporation (LAEDC), over the course of 2006 an average transoceanic flight traveling round-trip from LAX everyday added \$623 million in economic output and sustained 3,120 direct and indirect jobs in Southern California with \$156 million in wages.<sup>8</sup> Given the continued growth in, and reliance on, new large aircraft such as the Airbus A380 by major airlines operating on those long-distance international routes, it is important that LAX be able to effectively accommodate those aircraft.

LAX is a major employer on both a local level and a regional level. According to the LAX Master Plan Final EIS/EIR, on-airport employment at LAX provided almost 59,000 jobs and, on a larger-scale, LAX-related regional employment provided over 400,000 jobs and \$60 billion in economic output.<sup>9</sup>

In addition to being a major provider of permanent positions at the airport, LAX is also a major provider of construction jobs, particularly over the last several years through the economic recession. According to an economic impact analysis completed by the LAEDC in April 2011, construction of the airfield improvements (i.e., Crossfield Taxiway Project), terminal improvements (i.e., Bradley West Project), and other related improvement underway at the time, will create 39,900 jobs over the course of the program, or an average of 5,500 to 6,000 jobs per year. Of these, between 3,500 and 4,000 jobs will be in construction industries.<sup>10</sup>

It is LAWA's desire to provide improvements that further enable LAX to support and advance the economic growth and vitality of the Los Angeles region.

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<sup>8</sup> Los Angeles Economic Development Corporation, The Economic Activity Development on Overseas Flights at LAX, August 2007.

<sup>9</sup> City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX), Tables F4.4.1-1, F4.4.1-2, and F4.4.1-3, April 2004.

<sup>10</sup> Los Angeles Economic Development Corporation, Economic Impact Analysis - LAX Airfield and Terminal Construction Projects, 2011.

#### **4. Plan Improvements That Do Not Result in More Than 153 Passenger Gates at 78.9 MAP**

In identifying and evaluating alternatives to the demolition of Terminals 1, 2, and 3, LAWA is seeking to maintain consistency with the LAX Master Plan design for a total of 153 passenger gates, which was based on a future passenger activity level of 78.9 MAP at LAX in 2015.

#### **5. Enhance Safety and Security at LAX**

In identifying and evaluating alternatives to the Yellow Light Projects, which are key elements of the LAX Master Plan, LAWA is seeking to maintain the ability of the LAX Master Plan, if and as modified by the outcome of the SPAS process, to enhance safety and security at LAX.

#### **6. Minimize Environmental Impacts on Surrounding Communities**

LAX is a major international airport located within a very urbanized area, with established communities situated directly to the north, east, and south. These communities are affected to varying degrees by existing operations at the airport. Recognizing that these existing effects to the surrounding communities may change based on the alternatives being considered in SPAS, LAWA seeks to identify and apply ways to avoid, reduce, or minimize environmental impacts on surrounding communities.

#### **7. Produce an Improvement Program that is Efficient, Sustainable, Feasible, and Fiscally Responsible**

The nature and scope of improvements associated with the Yellow Light Projects are substantial. Each of those projects represents a major undertaking, requiring substantial funding; considerable planning, engineering, and design; and major construction activities. The costs for each of these major improvement projects would be financed primarily by Airport Improvement Program grants, Passenger Facility Charges (PFCs), and bond sales, all of which are subject to federal requirements regarding expenditure of airport funds, and which will also be utilized to finance other airport improvements outside of the scope of SPAS. The ability to successfully fund such improvements is, to a large extent, dependent on whether certain airport activity levels are reached. Additionally, the types of improvements associated with the Yellow Light Projects and the alternatives thereto represent major long-term investments in the airport's infrastructure that must be efficient and sustainable for many years. The construction of these major improvements poses the potential for major disruptions to existing airport operations. In identifying and evaluating alternatives to those Yellow Light Projects, LAWA is seeking to produce an improvement program that is efficient, sustainable, feasible, and fiscally responsible.

### **1.2.2 Overview of SPAS Alternatives**

Nine alternatives offering various options to the Yellow Light Projects, including one alternative that provides for implementation of the Yellow Light Projects (i.e., implement the Yellow Light Projects as generally reflected in the LAX Master Plan instead of options to those improvements), are addressed within this Draft EIR for SPAS. **Figure 1-4** identifies the location of the Yellow Light Project areas. The types of improvements used to define the key characteristics of each SPAS alternative can be grouped into the following three categories:

- ◆ **Airfield Improvements** - Airfield improvements include changes to the runways, taxiways, navigational aids, and service and maintenance roads associated with the north airfield. The primary differences in airfield improvements associated with the various SPAS alternatives pertain to:
  - ◆ Separation distances between runways and taxiways. Separation distances largely determine the maximum size aircraft that can freely operate on that system under various visibility conditions, and, in certain visibility conditions, would either require Federal Aviation Administration (FAA) approval of special operating procedures (i.e., Modifications of Standards or other forms of operational waivers) or would be prohibited;

## 1. Introduction and Executive Summary

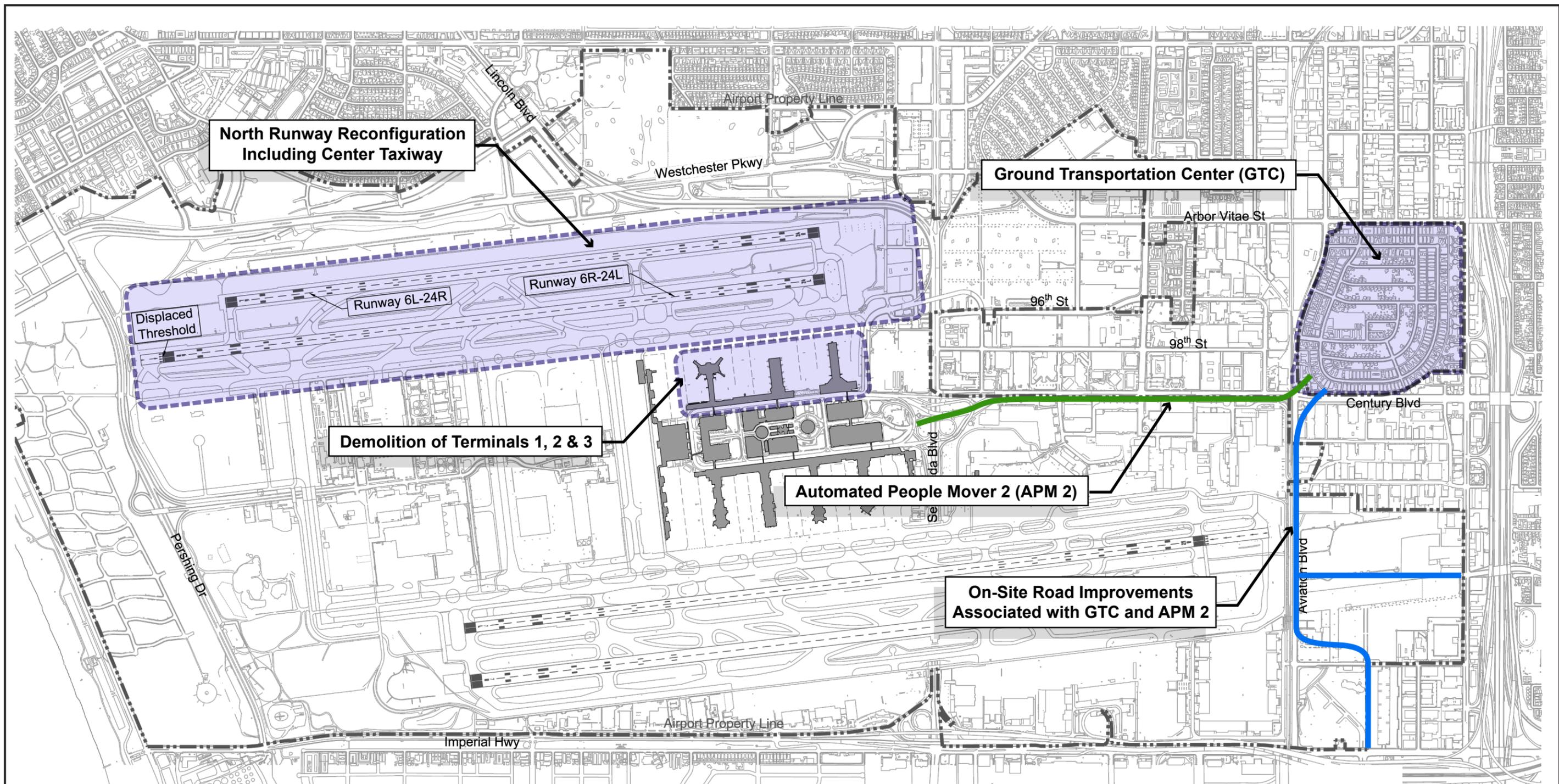
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- ◆ Whether an increase in the separation distance between Runway 6L/24R and Runway 6R/24L would allow for the construction of a centerfield parallel taxiway between the runways, to enable aircraft arriving on the outboard (6L/24R) runway to exit onto the center taxiway and hold while aircraft are departing on the inboard (6R/24L) runway, thereby allowing the departing aircraft to safely pass before the arriving aircraft proceeds to the terminal gates;
- ◆ The extent to which the Lincoln Boulevard and the Argo Drainage Channel would have to be modified in order to accommodate a northerly shift in the alignment of Runway 6L/24R;
- ◆ Whether Runway 6R/24L would be extended 1,250 feet eastward to provide greater departure length in west flow condition that would better accommodate departures of large aircraft on long-haul flights and improve the balance between the north airfield and the south airfield relative to such departures;
- ◆ Whether Runway 6L/24R would be reconfigured or extended to relocate its associated RPZ with respect to residential uses, and/or to improve the north airfield and the south airfield relative to the operation of aircraft;
- ◆ How RSA requirements would be met, in terms of runway extensions, declared distances,<sup>11</sup> displaced thresholds,<sup>12</sup> or a combination thereof; and
- ◆ Separation distances between Runway 6R/24L, Taxiway E, Taxilane D, the adjacent vehicle service road, and the aircraft gates/parking positions at the north end of the CTA, which largely determine the maximum size aircraft that can either freely operate on that system or would be subject to certain limitations, particularly as related to the interface between aircraft going to or from the gates at Terminals 1 through 3 and aircraft taxiing to the east end of Runway 6R/24L for departure.
- ◆ Terminal Improvements - Terminal improvements consist primarily of additions/demolitions to existing terminals/concourses, and, for most SPAS alternatives, the construction of a new terminal - Terminal 0 ("zero"). The primary differences in terminal improvements for the various SPAS alternatives are directly related to the movement of runways and taxiways under each alternative. Specifically, the alternatives differ in the location of their building limit lines (i.e., the "object free" safety area along runways and taxiways where no part of a structure can be present) and their aircraft parking limit lines (APLL) (i.e., the safety clearance setback area along runways and taxiways into which no part of an aircraft parked at a gate can extend). The northernmost limit of concourse building area and/or aircraft gate parking positions is defined by the southernmost safety clearance distance for the runways and taxiways in the north airfield. Depending on the location and design of the runways and taxiways associated with each alternative, the locations of the building limit line and APLL may differ between alternatives.

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<sup>11</sup> Declared distances are the distances the airport operator declares available for an aircraft's take-off run, take-off distance, accelerate-stop distance, and landing distance requirements to obtain a standard safety area.

<sup>12</sup> A displaced threshold is a threshold that is located on a point on the runway other than the designated beginning of the runway to satisfy approach surface criteria and/or RSA length requirements.



Source: LAX Specific Plan, 2004, as amended 2007, and LAX Stipulated Settlement, 2006.  
 Prepared by: CDM Smith, 2012.

**1. Introduction and Executive Summary**

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## 1. Introduction and Executive Summary

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In general, the building lines and APLLs associated with most of the alternatives extend southward, overlapping, to varying degrees, portions of the concourse areas for Terminals 1 through 3, which would require removal (demolition) of those building areas that encroach past the building limit line and/or the elimination or reduction in aircraft size capability of gate parking positions that encroach past the parking limit line. Conversely, the building and parking limit lines associated with several alternatives do not extend as far south as the limit lines defined in the LAX Master Plan, which assumed the movement of Runway 6R/24L 340 feet south and defined the northerly building limits for the Tom Bradley International Terminal (TBIT) West Gates, currently under construction as part of the Bradley West Project, and the future Midfield Satellite Concourse (MSC). In those cases, establishing building and parking limit lines farther north than the current LAX Master Plan limit lines would allow the opportunity for a future northward extension (i.e., an addition to) the north concourses for Bradley West and the MSC.

While the amount of concourse area and the layout of aircraft gates vary between alternatives, none of the SPAS alternatives includes more than 153 passenger gates.

Certain alternatives propose a westerly realignment of the Terminal 3 concourse to provide a wider alleyway between the concourses at Terminals 2 and 3 for aircraft taxiing.

For those alternatives that include development of the new Terminal 0, the existing alignment of Sky Way (the primary access road connecting CTA to southbound Sepulveda and 96th Street Bridge) would be shifted east, into the area now occupied by the Park One parking lot, providing an improved entrance roadway into the CTA.

- ◆ Ground Access Improvements - Ground access improvements consist of changes to on-airport and off-airport roads, addition of specific transportation facilities, development of dedicated access (i.e., busway or APM) into the CTA, and changes in parking locations. While the focus of SPAS is on alternatives to the Yellow Light Projects, such as the GTC and its associated roadways and one of the two APM systems proposed under the LAX Master Plan (APM 2), the ground access improvements proposed under the various SPAS alternatives also take into consideration key non-Yellow Light projects that are integral parts of the overall ground access system. Such projects include the Consolidated Rental Car Facility (CONRAC), the Intermodal Transportation Center (ITC), the APM connecting the ITC and CONRAC to the CTA, and the West Employee Parking facility. The ground access improvements proposed under the various SPAS alternatives represent different combinations of options to the Yellow Light Projects. Due to integral nature of these key non-Yellow Light projects with the overall ground access system, the SPAS alternatives include proposed modifications to, or proposed deletion of, these non-Yellow Light projects.

Alternatives 1 through 4 are presented in this EIR as "fully-integrated" alternatives that include specific improvements in all three categories: airfield improvements, terminal improvements, and ground access improvements. Alternatives 5 through 7 focus on variations to the airfield improvements, which, in turn, affect the terminal improvements. Alternatives 8 and 9 focus on variations to the ground access improvements.

Although the primary focus of Alternatives 5 through 9 is on specific categories of improvements, there is a certain amount of compatibility or "interchangeability" between the SPAS alternatives. Specifically, the airfield and terminal improvements in Alternatives 5 through 7 are equally compatible with the ground access improvements in Alternatives 1, 2, 8, and 9. Likewise, the ground access improvements in Alternatives 8 and 9 are equally compatible with the airfield and terminal improvements in Alternatives 1, 2, 5, 6, and 7. In other words, the proposed ground transportation system incorporated into Alternatives 1 and 2 could function in the same manner with Alternatives 5, 6, or 7. That would also be the case for the ground transportation systems under Alternatives 8 and 9, which could be developed under Alternatives 5, 6, or 7, and could also replace the ground transportation system currently proposed for Alternatives 1 and 2. On the other hand, Alternatives 3 and 4 are unique "fully-integrated" alternatives and are not considered to have elements that are "interchangeable" with the other SPAS alternatives. While Alternatives 5, 6, and 7 focus on options for airfield/terminal improvements and Alternatives 8 and 9 focus on options for ground access improvements, these five alternatives (Alternatives 5 through 9) would

## 1. Introduction and Executive Summary

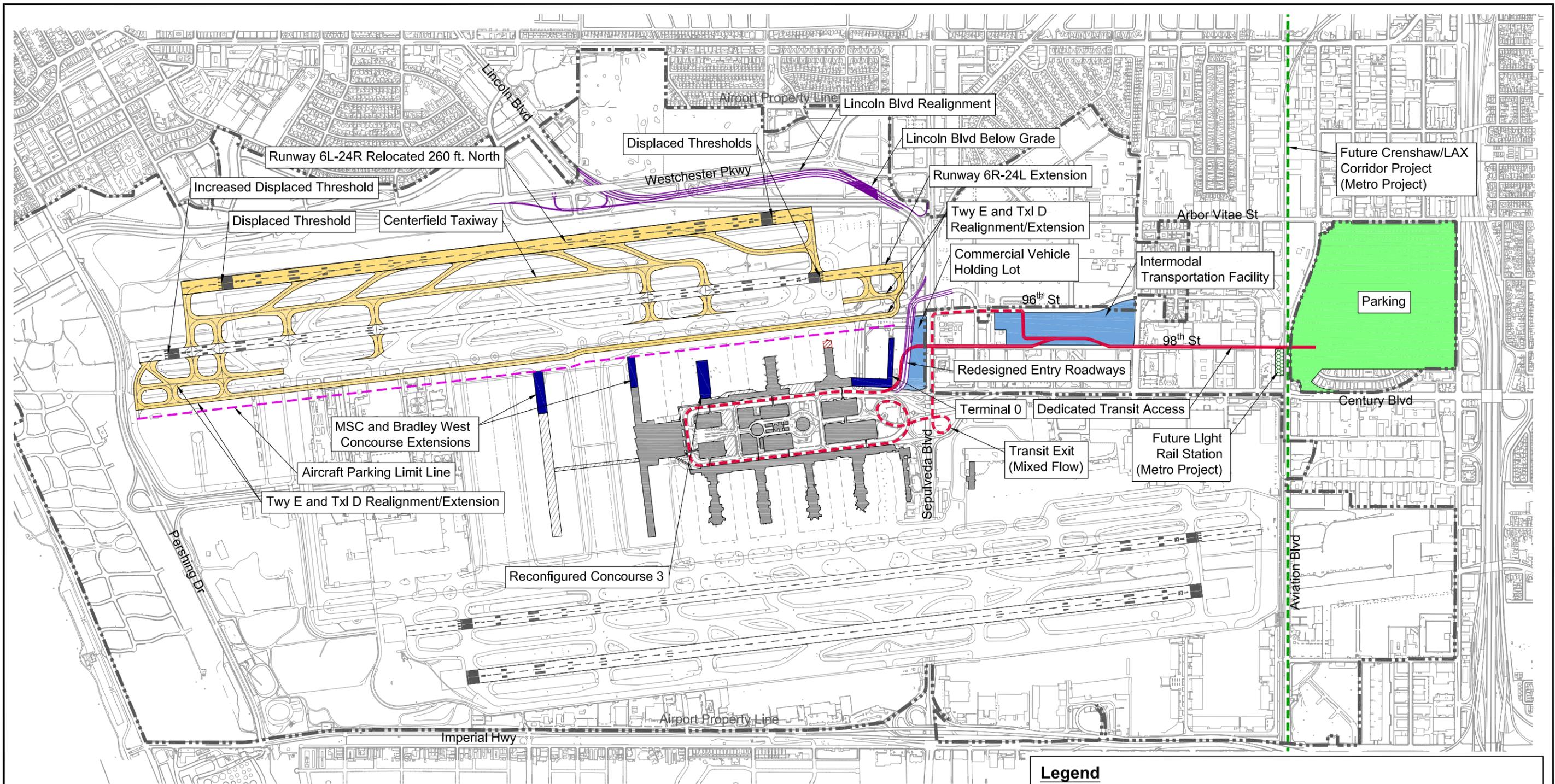
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only address all of the problems that the Yellow Light Projects were designed to address in conjunction with another alternative (Alternatives 1 through 4), or portion thereof. The following summarizes the key characteristics of each of the nine alternatives addressed in this Draft EIR.

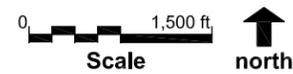
**Alternative 1** is a fully-integrated alternative, consisting of airfield, terminal, and ground access components. The distinguishing airfield improvement feature of this alternative is the movement of Runway 6L/24R 260 feet north, along with the addition of a centerfield taxiway, the extension of Runway 6R/24L, improvements to Taxiway D and Taxiway E, and relocation of the service road. Terminal Improvements include addition of new Terminal 0, loss or modifications to concourse areas and/or gates at Terminals 1, 2, and 3, and the modification and potential northward extension of concourse area and gates at TBIT and the future MSC. Ground access improvements include modification of Sky Way; development of an Intermodal Transportation Facility (ITF) at 98th Street west of Airport Boulevard; development of an elevated/dedicated busway along 98th Street, with a bridge over Sepulveda Boulevard and stops at Manchester Square (future surface parking), the future Metro LAX/Crenshaw Light Rail Transit Station at/near Century and Aviation Boulevards, the ITF, and the CTA; and the relocation of Lincoln Boulevard, a portion of which would be below grade and/or tunneled. This alternative is illustrated in **Figure 1-5**.

**Alternative 2** is a fully-integrated alternative, consisting of airfield, terminal, and ground access components. This alternative is distinguished by the fact that it does not propose a northerly relocation of Runway 6L/24R or a southerly relocation of Runway 6R/24L. This alternative does not include a centerfield taxiway, but does include the modification and addition of high-speed runway exits (taxiways) to enhance the safe and efficient movement of arriving aircraft. Many of the improvements associated with Alternative 2 are the same as those associated with Alternative 1, including Runway 6R/24L, Taxiway E and Taxiway D, service road relocation, terminal and gate modifications, and ground access components. Improvements associated with Runway 6L/24R under this alternative, including connecting taxiways, are different than Alternative 1. Because there would be no northerly relocation of Runway 6L/24R under Alternative 2, it does not require the modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) and Lincoln Boulevard described above for Alternative 1. This alternative is illustrated in **Figure 1-6**.

**Alternative 3** is the CEQA "No Project" Alternative and represents what would reasonably be expected to occur in the foreseeable future if the LAX Master Plan (i.e., "Alternative D") and all of the LAX Master Plan improvements, including the Yellow Light Projects, were implemented as originally envisioned. Analysis of Alternative 3 will allow decision-makers and the public to compare the impacts of implementing alternatives to the LAX Master Plan with the impacts that would occur under the LAX Master Plan. Alternative 3 is a fully-integrated alternative, consisting of airfield, terminal, and ground access components. The distinguishing airfield improvement related to this alternative is the movement of Runway 6R/24L 340 feet south, along with the addition of a new centerfield taxiway, extension of Runway 6L/24R, and relocation and improvements to Taxiway E, Taxiway D, and service roads. Related terminal improvements include demolition of the concourses/gates at Terminals 1, 2, and 3 and replacement with a new linear concourse, elimination of the northernmost gates at TBIT, and replacement of the existing CTA parking structures with new passenger processing terminals. Key ground access improvements include closure of the CTA to private vehicles; development of a GTC at Manchester Square, an ITC at the area referred to as Continental City with a pedestrian bridge to the existing Metro Green Line Station, and a CONRAC at Parking Lot C; development of two APM systems to link the ITC, CONRAC, and CTA and link the GTC and CTA; construction of new on-airport roads east of and parallel to Aviation Boulevard; reconfiguration and expansion of Parking Lot E located west of La Cienega Boulevard; and construction of a West Employee Parking facility. There would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) or Lincoln Boulevard under this alternative. This alternative is illustrated in **Figure 1-7**.



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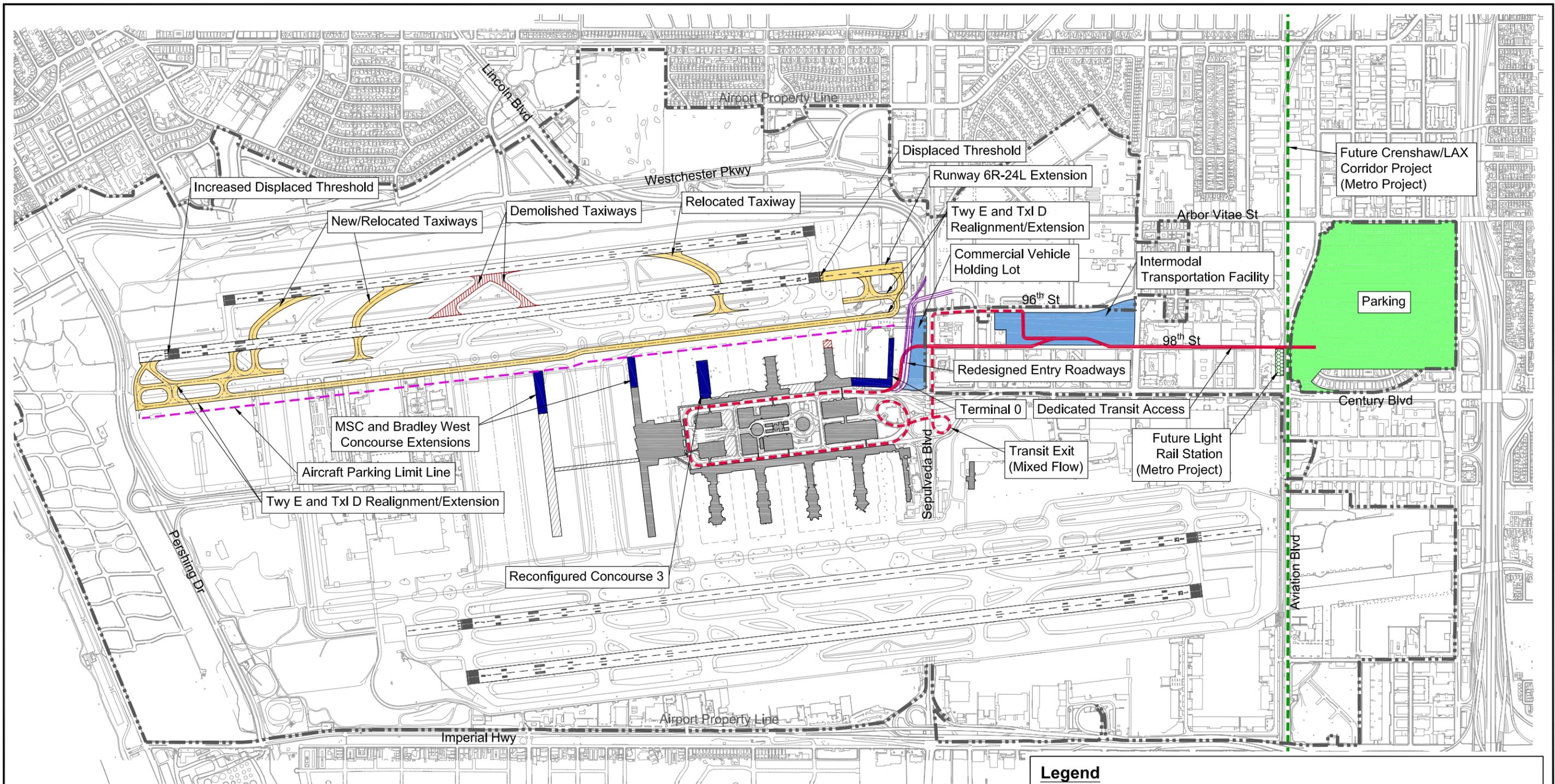
**Legend**

- |   |                                |   |                                 |
|---|--------------------------------|---|---------------------------------|
|  | Airfield Improvements          |  | Ground Access Facilities        |
|  | Terminal Improvements          |  | Parking                         |
|  | Terminal Demolition            |  | Transit Access (Dedicated)      |
|  | Non-SPAS Terminal Improvements |  | Transit Access (Mixed Flow)     |
|  | Aircraft Parking Limit Line    |  | Future Metro Light Rail Project |
|  | Roadway Improvements           |   |                                 |

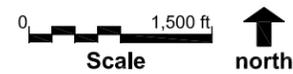
**1. Introduction and Executive Summary**

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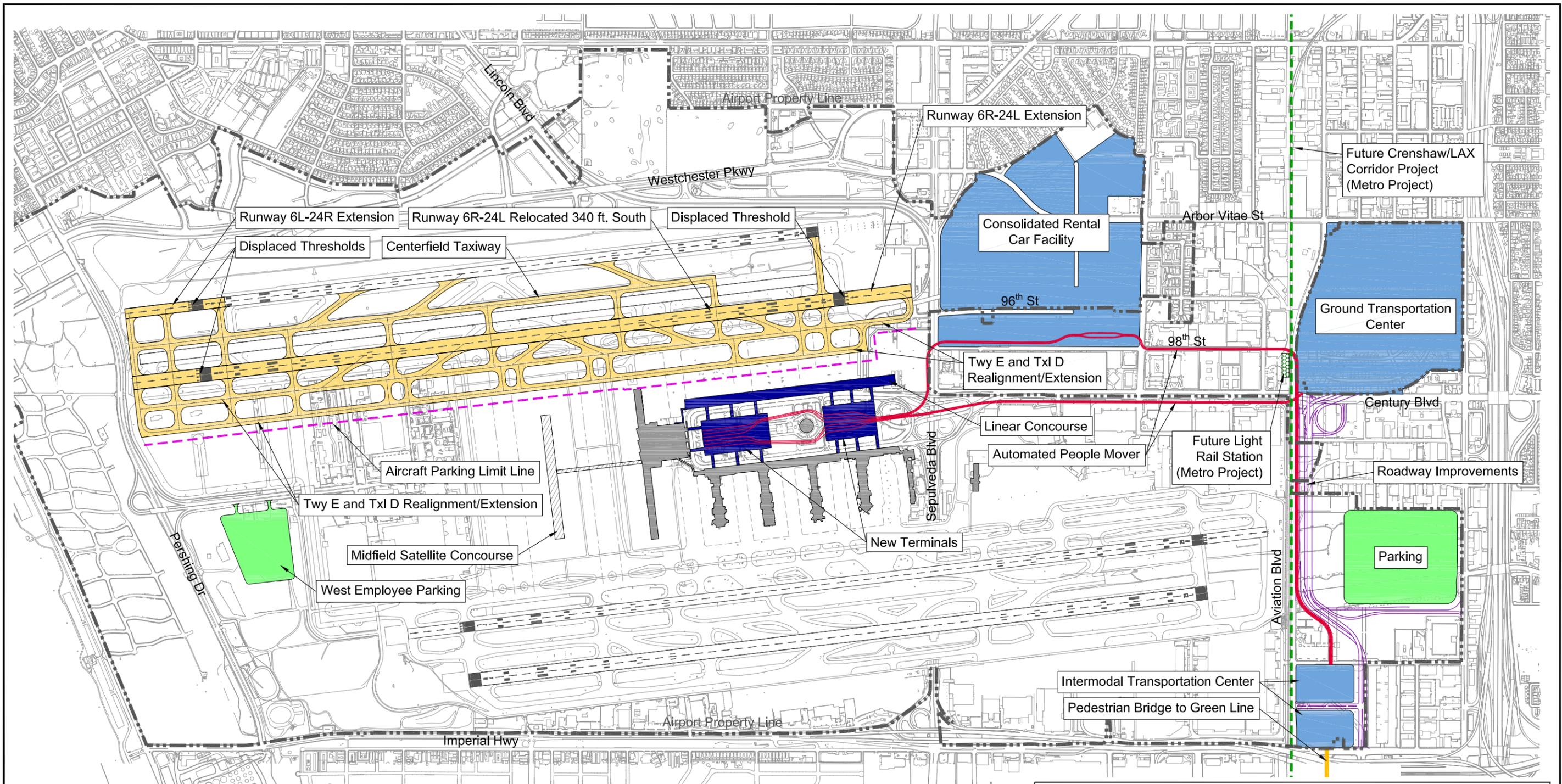
**Legend**

- |  |   |
|--|---|
|  Airfield Improvements          |  Ground Access Facilities        |
|  Terminal Improvements          |  Parking                         |
|  Terminal/Taxiway Demolition    |  Transit Access (Dedicated)      |
|  Non-SPAS Terminal Improvements |  Transit Access (Mixed Flow)     |
|  Aircraft Parking Limit Line    |  Future Metro Light Rail Project |
|  Roadway Improvements           |   |

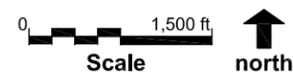
**1. Introduction and Executive Summary**

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**Legend**

- Airfield Improvements
- Terminal Improvements
- Non-SPAS Terminal Improvements
- Aircraft Parking Limit Line
- Roadway Improvements
- Ground Access Facilities
- Parking
- Automated People Mover (APM)
- Future Metro Light Rail Project

## ***1. Introduction and Executive Summary***

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## 1. Introduction and Executive Summary

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**Alternative 4** represents what would reasonably be expected to occur if all ongoing and reasonably foreseeable non-Yellow Light improvements identified in the LAX Master Plan (i.e., "Alternative D") were implemented, and none of the Yellow Light Projects or any of the identified alternatives to the LAX Master Plan Program were constructed or implemented. Analysis of Alternative 4 will allow decision-makers and the public to evaluate the impacts of simply eliminating the Yellow Light Projects from the LAX Master Plan Program. Alternative 4 is a fully-integrated alternative, consisting of airfield, terminal, and ground access components. Ongoing and reasonably-foreseeable non-Yellow Light projects that would be developed include the Bradley West Project, an extension to Runway 6R/24L for RSA improvements, the MSC and related new passenger processor and connector within the CTA, and various terminal improvements. In addition, a CONRAC at Parking Lot C would be constructed and a new parking structure would be developed at the ITC site to accommodate the public parking displaced by the CONRAC. A portion of the Argo Drainage Channel would be covered to comply with existing RSA requirements by converting a portion of the existing open unlined channel to an enclosed concrete box culvert. There would be no modifications to Lincoln Boulevard under this alternative. This alternative is illustrated in **Figure 1-8**.

**Alternative 5** provides, as noted above, a focus on airfield improvements and associated terminal improvements, as may be compared to such improvements proposed under Alternatives 1 through 4. This alternative is compatible with the ground access improvements associated with Alternatives 1 and 2, as well as the ground access improvements associated with Alternatives 8 and 9, described below. The distinguishing feature of this alternative is the movement of Runway 6L/24R 350 feet north. Similar to Alternative 1, a new centerfield taxiway would be constructed, Runway 6R/24L would be extended, Taxiway D and Taxiway E would be modified/improved, and the service road would be relocated. Under this alternative, the taxiway/taxiway improvements would meet FAA design requirements to fully accommodate ADG VI aircraft. (Under Alternatives 1, 2, and 6, the taxiway configuration would either not meet or only partially meet ADG VI design standards, which would impose certain limitations and special requirements during the operation of those aircraft.) The increased runway-taxiway separation requirements under this alternative would cause the aircraft taxiway operations area to extend farther south than under Alternatives 1, 2, and 6, which, in turn, would result in comparatively less concourse and/or gate area for the potential TBIT extension and MSC extension. Under this alternative, a greater portion of Lincoln Boulevard would be below grade and/or tunneled than under Alternative 1. This alternative is illustrated in **Figure 1-9**.

**Alternative 6**, similar to Alternative 5, also focuses on airfield improvements and associated terminal improvements, as may be compared to such improvements proposed under Alternatives 1 through 4. This alternative is compatible with the ground access improvements associated with Alternatives 1 and 2, as well as the improvements associated with Alternatives 8 and 9. The distinguishing feature of this alternative is the movement of Runway 6L/24R 100 feet north. Similar to Alternative 1, a new centerfield taxiway would be constructed. All other physical aspects of the airfield and terminal improvements associated with this alternative would be essentially the same as those of Alternative 1, described above, with a lesser portion of the Argo Drainage Channel requiring covering (i.e., conversion to a concrete box culvert) and a lesser portion of Lincoln Boulevard requiring tunneling. This alternative is illustrated in **Figure 1-10**.

**Alternative 7**, similar to Alternatives 5 and 6, also focuses on airfield improvements and associated terminal improvements, as may be compared to such improvements proposed under Alternatives 1 through 4. This alternative is compatible with the ground access improvements associated with Alternatives 1 and 2, as well as the improvements associated with Alternatives 8 and 9. The distinguishing feature of this alternative is the movement of Runway 6R/24L 100 feet south. Similar to Alternative 1, a new centerfield taxiway would be constructed, Runway 6R/24L would be extended, Taxiway E and Taxiway D would be modified/improved, and the service road would be relocated. The southward movement of the runway and associated southerly relocation of Taxiway E and Taxiway D would cause the aircraft taxiway operations area to extend farther

## 1. Introduction and Executive Summary

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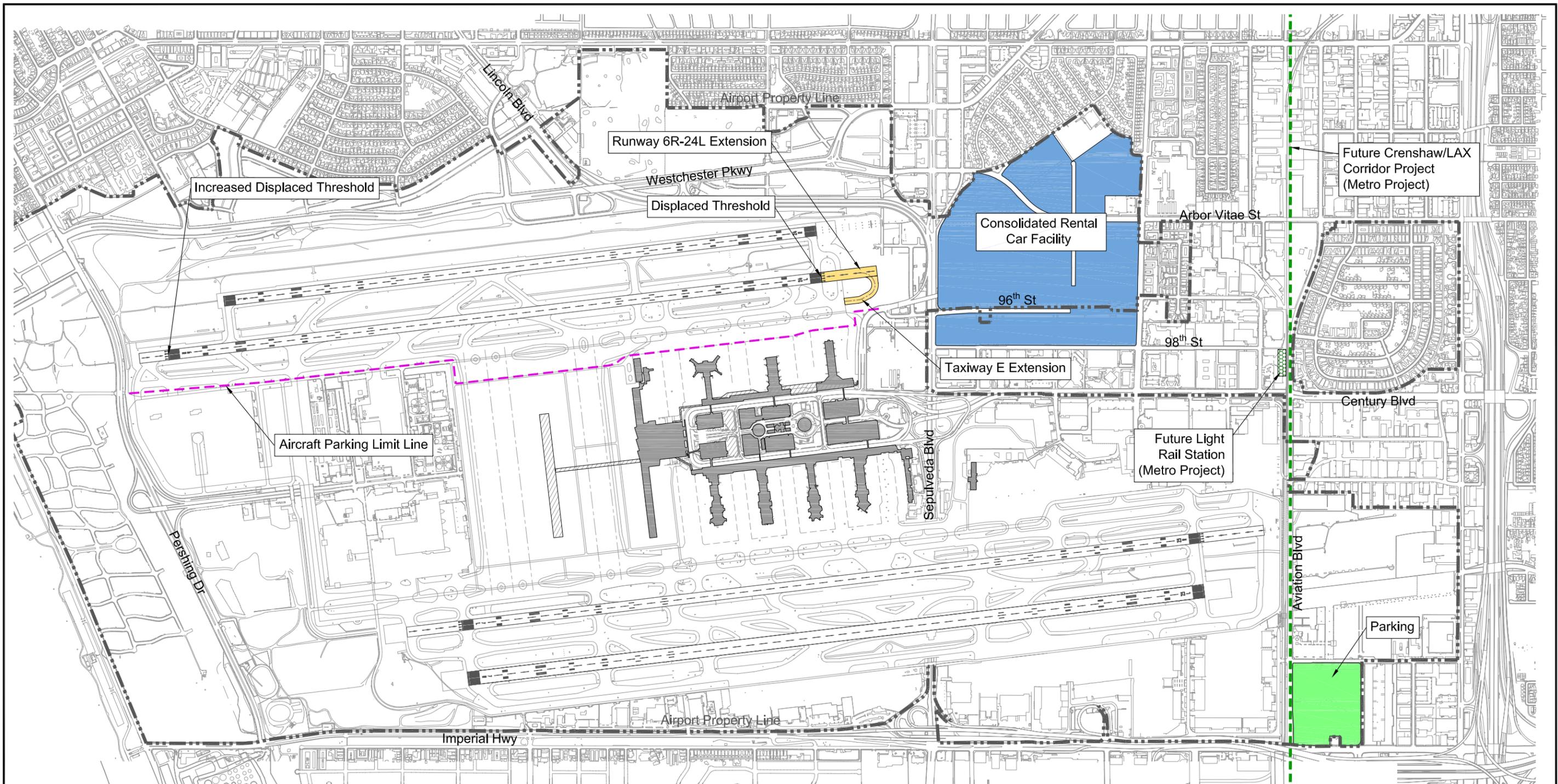
south than under Alternatives 1, 2, 5, and 6, which, in turn, would result in comparatively less concourse and/or gate area for Terminal 3, potential TBIT extension, and potential MSC extension. There would be no modifications to the Argo Drainage Channel (other than those required under existing conditions to meet federal RSA requirements) or Lincoln Boulevard under this alternative. The RPZ currently associated with Runway 6L/24R would continue to overlay existing residential uses. This alternative is illustrated in **Figure 1-11**.

**Alternative 8** focuses on ground access improvements that could be integrated in place of the improvements proposed under Alternatives 1 through 4. This alternative is compatible with the airfield and terminal improvements associated with Alternatives 1, 2, 5, 6, and 7. The distinguishing feature of this alternative is the development of a CONRAC in addition to parking at Manchester Square, and the development of parking at the Avis facility (east of Parking Lot C). All other ground access aspects of this alternative are comparable to those of Alternatives 1 and 2, with the exception of the realignment of Lincoln Boulevard, which is only associated with the airfield improvement alternatives. This alternative is illustrated in **Figure 1-12**.

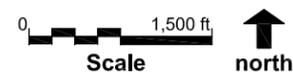
**Alternative 9**, similar to Alternative 8, focuses on ground access improvements that could be integrated in place of the improvements proposed under Alternatives 1 through 4. This alternative is compatible with the airfield and terminal improvements associated with Alternatives 1, 2, 5, 6, and 7. The distinguishing features of this alternative are the development of an APM system, instead of a busway, along 98th Street, and development of a CONRAC in addition to parking at Manchester Square. The APM would be located within an elevated/dedicated corridor on the same alignment as the busway under the other alternatives. Within the CTA, the APM would be located on a new elevated guideway. All other ground access aspects of this alternative are comparable to those of Alternatives 1 and 2, with the exception of the realignment of Lincoln Boulevard, which is only associated with the airfield improvement alternatives. This alternative is illustrated in **Figure 1-13**.

### 1.2.3 Preliminary Evaluation of Relationship Between Project Objectives and SPAS Alternatives

Based on the project objectives presented above in Section 1.2.1 and the characteristics of the nine SPAS alternatives summarized in Section 1.2.2, **Table 1-2** presents a preliminary evaluation of the relationship between each project objective and each SPAS alternative. A more detailed evaluation of that relationship will be completed in conjunction with further evaluation of the alternatives through preparation of the Final EIR and during the public hearings process. **Table 1-3** provides additional information summarizing key characteristics associated with the SPAS alternatives that pertain to each objective.



Note: Improvements depicted are conceptual only and do not represent engineered design.



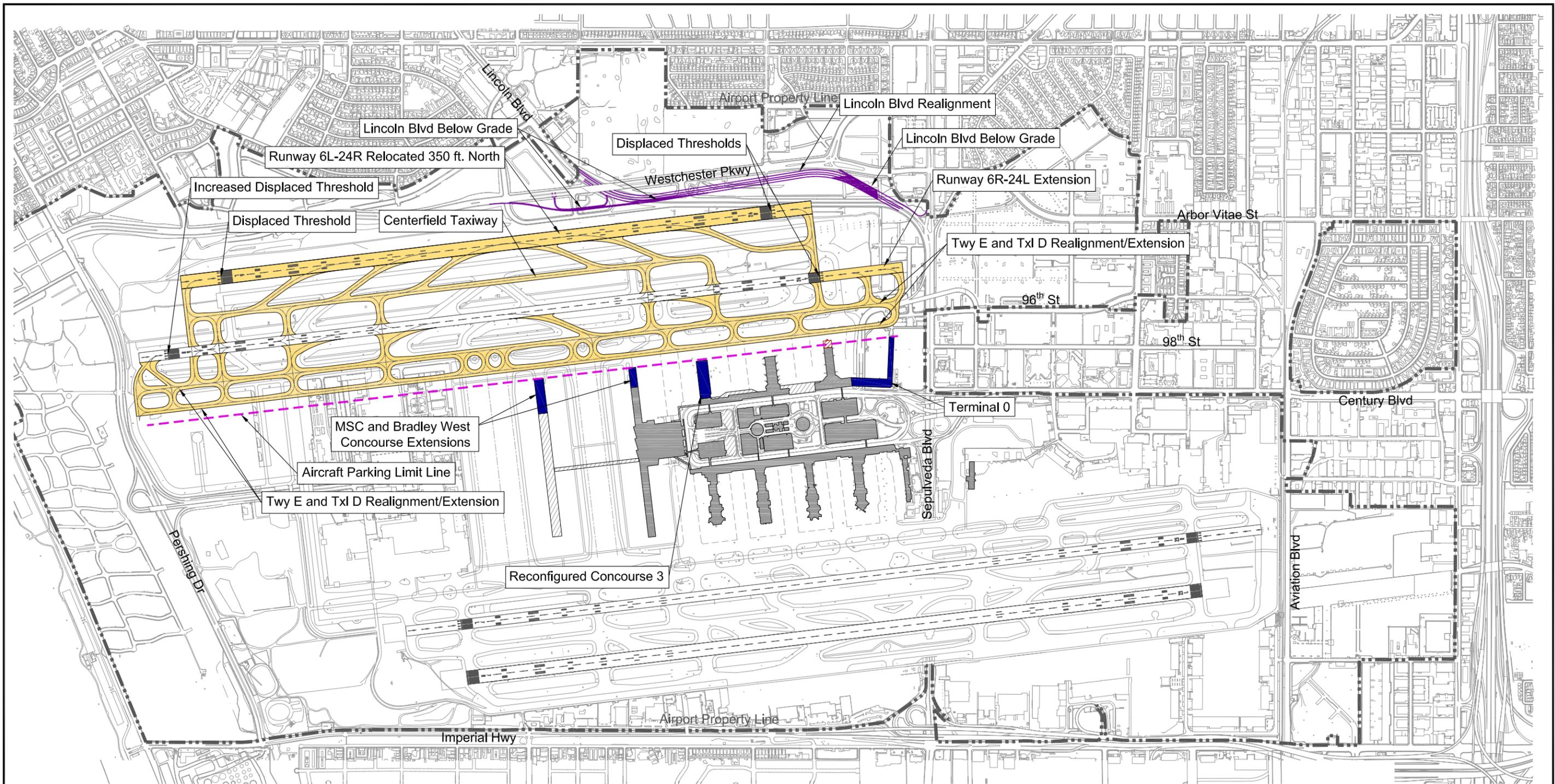
Prepared by: Ricondo & Associates, Inc., 2012.

Legend	
	Airfield Improvements
	Ground Access Facilities
	Non-SPAS Terminal Improvements
	Parking
	Aircraft Parking Limit Line
	Future Metro Light Rail Project

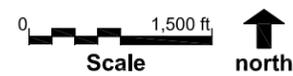
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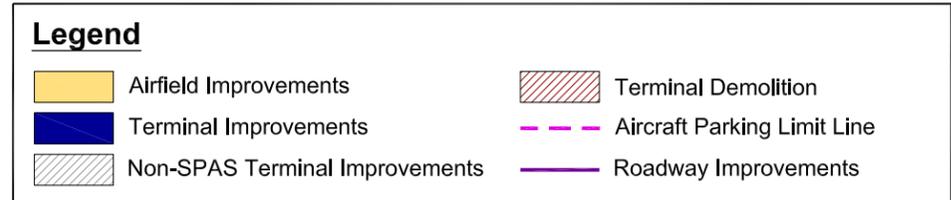
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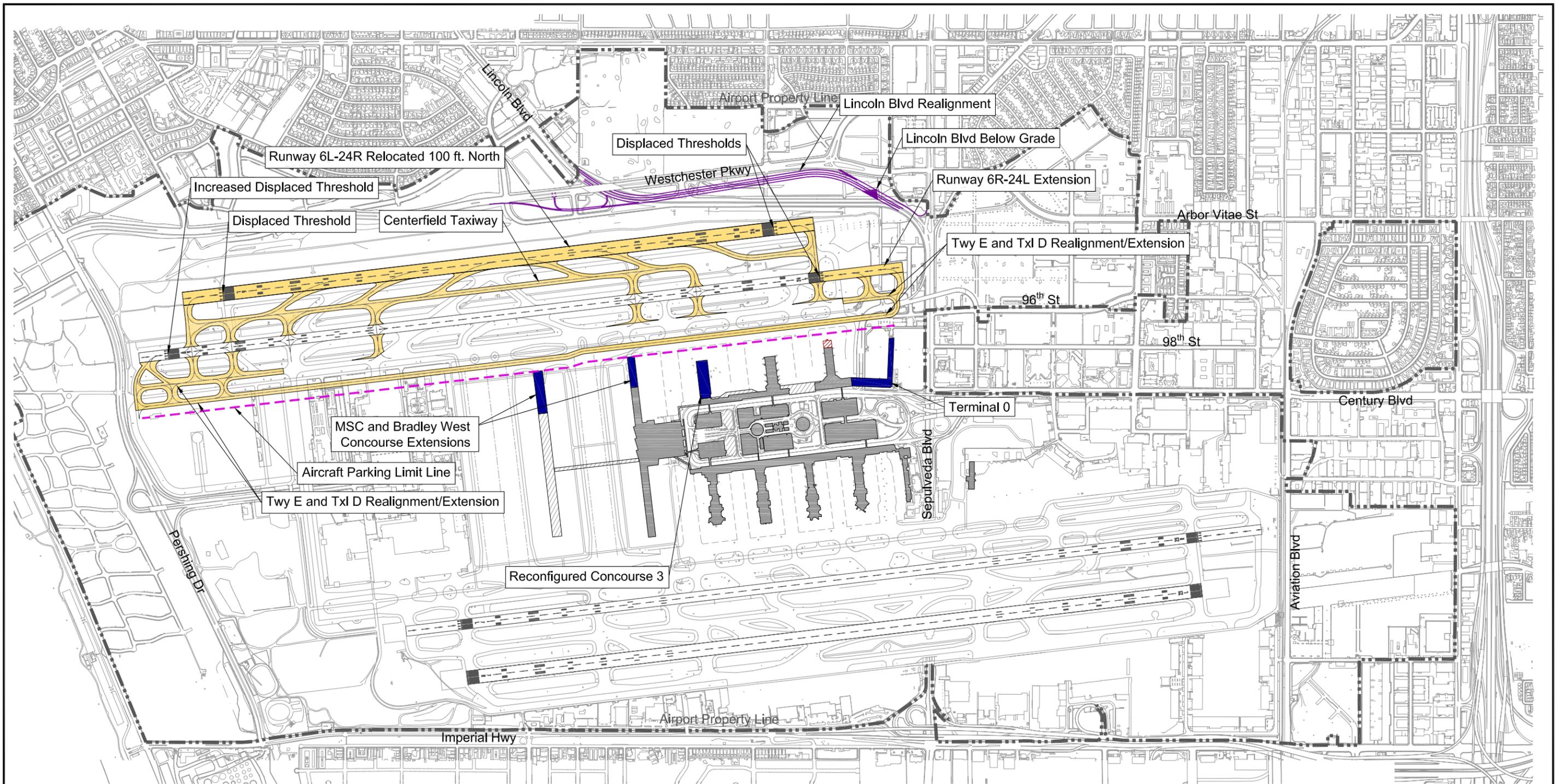
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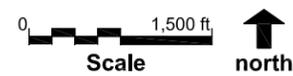
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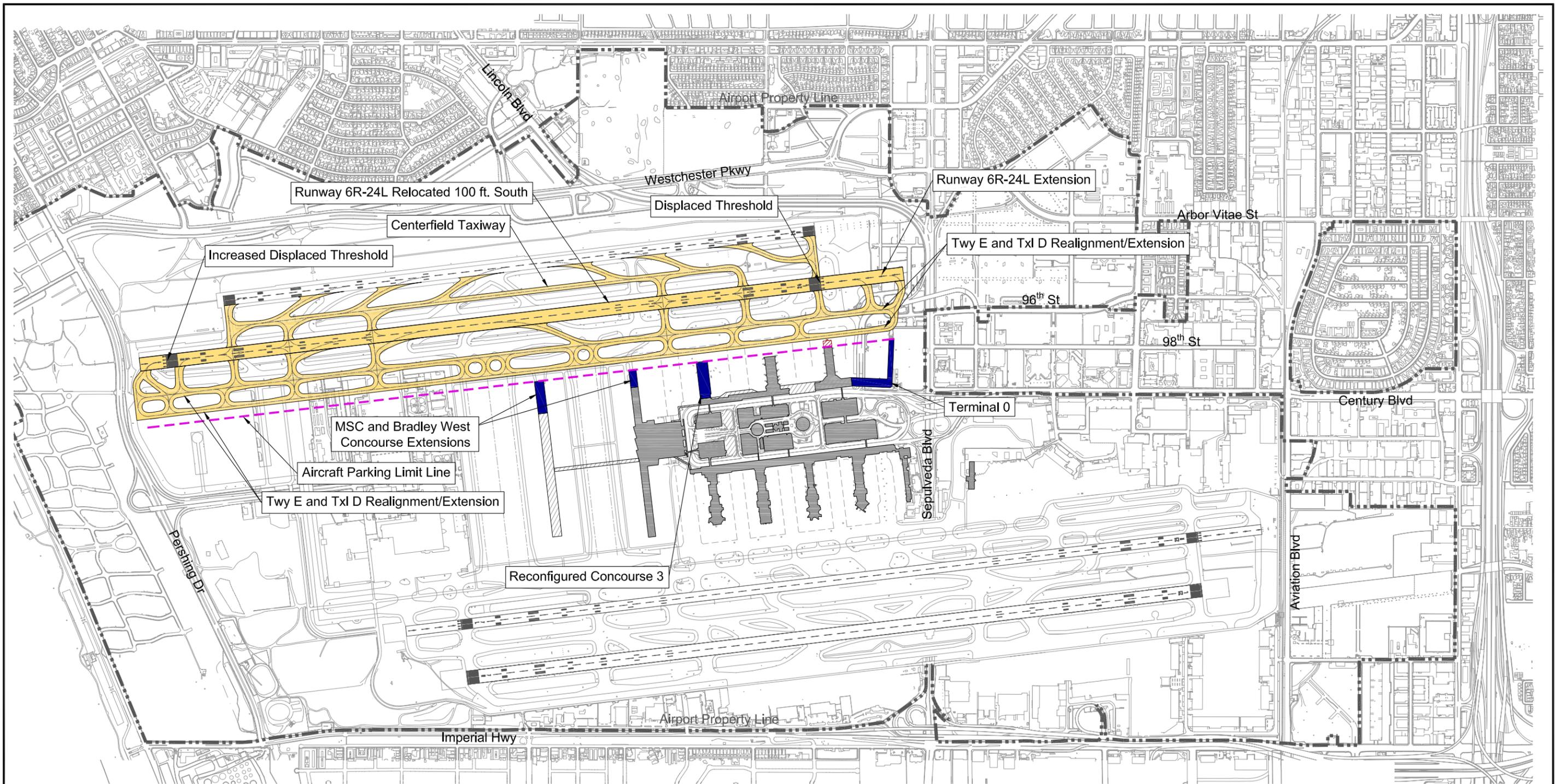
**Legend**

- Airfield Improvements
- Terminal Improvements
- Non-SPAS Terminal Improvements
- Terminal Demolition
- Aircraft Parking Limit Line
- Roadway Improvements

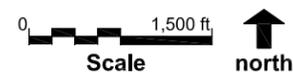
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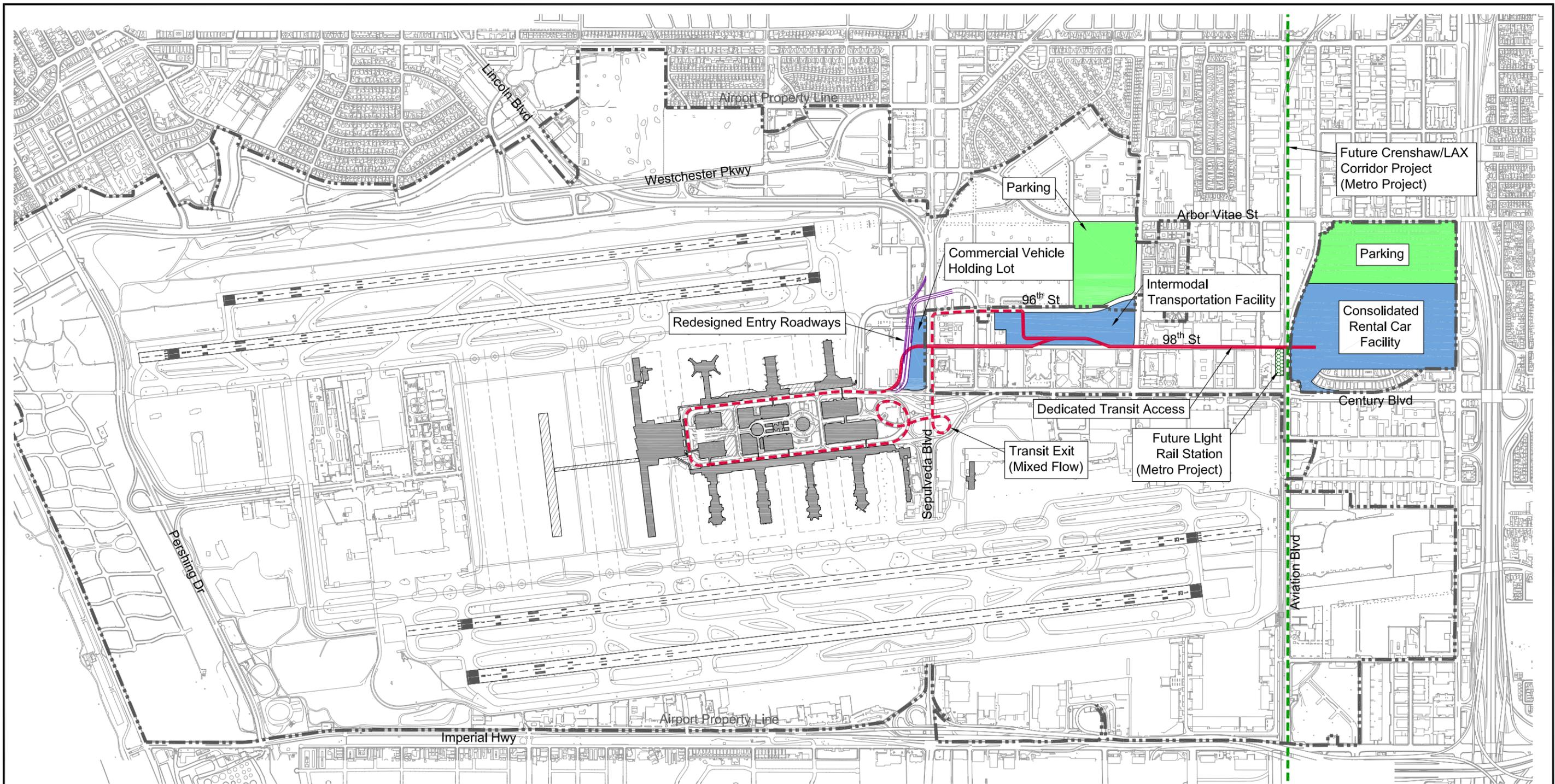
**Legend**

- Airfield Improvements
- Terminal Improvements
- Non-SPAS Terminal Improvements
- Terminal Demolition
- Aircraft Parking Limit Line

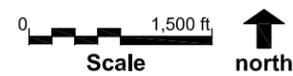
## ***1. Introduction and Executive Summary***

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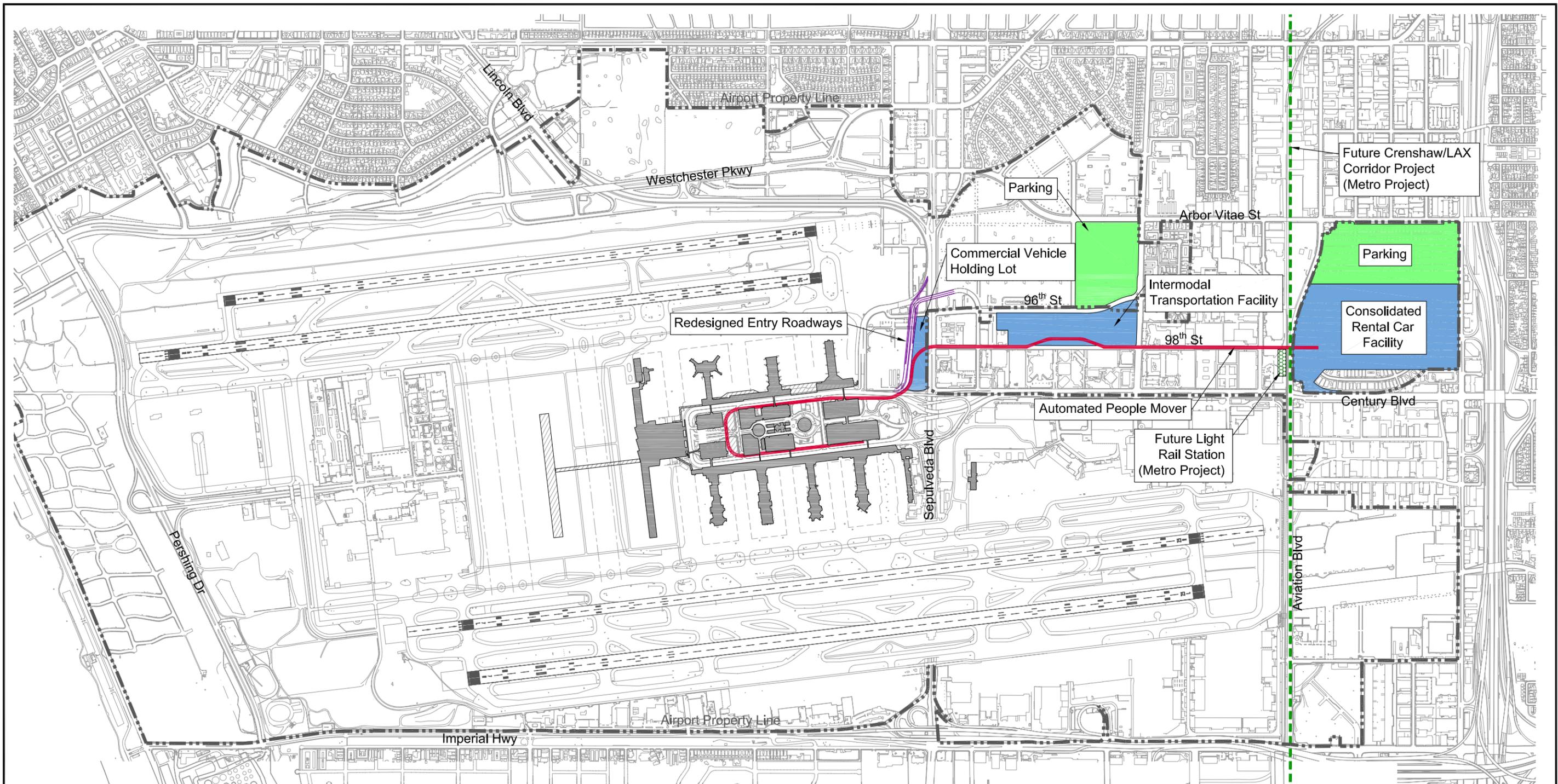
**Legend**

- Non-SPAS Terminal Improvements
- Roadway Improvements
- Ground Access Facilities
- Parking
- Transit Access (Dedicated)
- Transit Access (Mixed Flow)
- Future Metro Light Rail Project

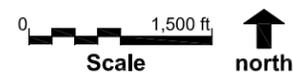
## ***1. Introduction and Executive Summary***

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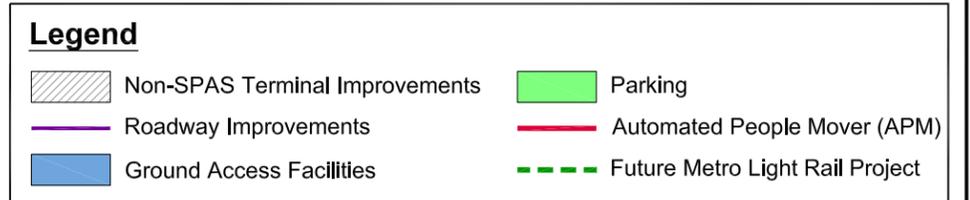
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Table 1-2

Preliminary Evaluation of Relationship Between Project Objectives and SPAS Alternatives

Legend	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9
<p>● = Alternative Fully Responds to Objective</p> <p>◐ = Alternative Largely Responds to Objective</p> <p>◑ = Alternative Partially Responds to Objective</p> <p>◒ = Alternative Minimally Responds to Objective</p> <p>○ = Alternative Does Not Respond to Objective</p>	Move Rwy 6L/24R 260' North - Add Centerfield Taxiway - Improve Ground Access	No Increased Runway Separation - No Centerfield Taxiway - Improve Ground Access	LAX Master Plan Alt. D: Move Rwy 6R/24L 340' South - Add Centerfield Taxiway - Close CTA to Traffic - Improve Ground Access	No Airfield Improvements - Build CONRAC in Lot C - No Other Ground Access Improvements	Move Rwy 6L/24R 350' North - Add Centerfield Taxiway	Move Rwy 6L/24R 100' North - Add Centerfield Taxiway	Move Rwy 6R/24L 100' South - Add Centerfield Taxiway	Build CONRAC in Manchester Square - Improve Ground Access w/Busway	Build CONRAC in Manchester Square - Improve Ground Access w/APM
<b>Project Objective</b>	Preliminary Assessment of Alternatives' Responsiveness to Objectives - See Table 1-3 for Related Supporting Discussion								
1. Provide North Airfield Improvements That Support Safe and Efficient Movement of Aircraft at LAX (i.e., meet FAA design standards for large aircraft, minimize need for operational waivers/restrictions, reduce potential for incursions, improve balance w/South Airfield, reduce RPZ in residential areas)	◑	◑	●	○	●	◑	◑	na	na
	<p>Key:</p> <ul style="list-style-type: none"> <li>● Standardizes all airfield operations, substantially improves pilot situational awareness, addresses all airfield hazards, and includes efficiency features.</li> <li>◐ Provides for standardization of nearly all airfield operations, substantially improves pilot situational awareness, addresses all airfield hazards, and includes efficiency features.</li> <li>◑ Provides improvement in standardization of airfield operations, addresses all airfield hazards, and includes efficiency features.</li> <li>◒ Does not increase standardization of airfield operations, addresses some airfield hazards, and includes efficiency features.</li> <li>○ Does not increase standardization of airfield operations, addresses very few airfield hazards, and includes no efficiency features.</li> </ul>								
2. Improve Ground Access System to Better Accommodate Airport-Related Traffic, Especially as Related to CTA (i.e., types of improvements could include: (1) redesign CTA roadway segments/curbsides prone to traffic bottlenecks; (2) reduce traffic volumes within CTA by providing transportation facilities outside of CTA; (3) provide grade-separated/dedicated access route into CTA; and (4) integrate CTA with regional transit facilities)	●	●	●	◑	na	na	na	●	●
	<p>Key:</p> <ul style="list-style-type: none"> <li>● Provides 4 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◐ Provides 3 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◑ Provides 2 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◒ Provides 1 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>○ Does not provide any of the 4 types of improvements associated with the ground transportation planning objective.</li> </ul>								
3. Maintain LAX's Position as the Premier International Gateway in Supporting and Advancing the Economic Growth and Vitality of the Los Angeles Region	A=◑ T=● G=●	A=◑ T=● G=●	A=● T=● G=●	A=○ T=○ G=◑	A=● T=◑	A=◑ T=●	A=◑ T=◑	G=●	G=●
	<p>Key:</p> <p><b>Airfield (A)</b></p> <ul style="list-style-type: none"> <li>● Standardizes all airfield operations, substantially improves pilot situational awareness, addresses all airfield hazards, and includes efficiency features.</li> <li>◐ Provides for standardization of nearly all airfield operations, substantially improves pilot situational awareness, addresses all airfield hazards, and includes efficiency features.</li> <li>◑ Provides improvement in standardization of airfield operations, addresses all airfield hazards, and includes efficiency features.</li> <li>◒ Does not increase standardization of airfield operations, addresses some airfield hazards, and includes efficiency features.</li> <li>○ Does not increase standardization of airfield operations, addresses very few airfield hazards, and includes no efficiency features.</li> </ul>			<p>Key:</p> <p><b>Terminal (T)</b></p> <ul style="list-style-type: none"> <li>● Provides opportunity to modernize terminals and concourses for international passengers.</li> <li>◑ Provides reduced opportunity to modernize terminals and concourses for international passengers.</li> <li>○ Provides no terminal improvements</li> </ul>			<p>Key:</p> <p><b>Ground Transportation (G)</b></p> <ul style="list-style-type: none"> <li>● Provides 4 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◐ Provides 3 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◑ Provides 2 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>◒ Provides 1 of the 4 types of improvements associated with the ground transportation planning objective.</li> <li>○ Does not provide any of the 4 types of improvements associated with the ground transportation planning objective.</li> </ul>		

1. Introduction and Executive Summary

Table 1-2

Preliminary Evaluation of Relationship Between Project Objectives and SPAS Alternatives

Legend	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1 Move Rwy 6L/24R 260' North - Add Centerfield Taxiway - Improve Ground Access	Alternative 2 No Increased Runway Separation - No Centerfield Taxiway - Improve Ground Access	Alternative 3 LAX Master Plan Alt. D: Move Rwy 6R/24L 340' South - Add Centerfield Taxiway - Close CTA to Traffic - Improve Ground Access	Alternative 4 No Airfield Improvements - Build CONRAC in Lot C - No Other Ground Access Improvements	Alternative 5 Move Rwy 6L/24R 350' North - Add Centerfield Taxiway	Alternative 6 Move Rwy 6L/24R 100' North - Add Centerfield Taxiway	Alternative 7 Move Rwy 6R/24L 100' South - Add Centerfield Taxiway	Alternative 8 Build CONRAC in Manchester Square - Improve Ground Access w/Busway	Alternative 9 Build CONRAC in Manchester Square - Improve Ground Access w/APM
<b>Project Objective</b>	<b>Preliminary Assessment of Alternatives' Responsiveness to Objectives - See Table 1-3 for Related Supporting Discussion</b>								
4. Plan Improvements That Do Not Result in More Than 153 Passenger Gates at 78.9 MAP	●	●	●	●	●	●	●	na	na
	Key: ● Plans for 153 gates ○ Plans for more than 153 gates								
5. Enhance Safety and Security at LAX	SAF=● SEC=●	SAF=○ SEC=●	SAF=● SEC=●	SAF=○ SEC=●	SAF=● SEC=●	SAF=○ SEC=●	SAF=● SEC=●	SAF=na SEC=●	SAF=na SEC=●
	Key: <b>Safety (SAF)</b> ● Standardizes all airfield operations, substantially improves pilot situational awareness, and addresses all airfield hazards. ● Provides for standardization of nearly all airfield operations, substantially improves pilot situational awareness, and addresses all airfield hazards. ● Provides improvement in standardization of airfield operations, and addresses all airfield hazards. ● Does not increase standardization of airfield operations, and addresses some airfield hazards. ○ Does not increase standardization of airfield operations and addresses very few airfield hazards.						Key: <b>Security (SEC)</b> ● With appropriate security operations and protocols the alternative would meet existing and future federal security standards. ○ Implementation restricts ability of meeting federal security requirements.		
6. Minimize Environmental Impacts on Surrounding Communities	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)	(see Table 1-6)
	See Table 1-6 -- Provides specific references to the LAX Master Plan commitments and mitigation measures, as well as additional new mitigation measures, that serve to minimize environmental impacts.								
7. Produce an Improvement Program that is Efficient, Sustainable, Feasible, and Fiscally Responsible	●	●	○	●	●	●	●	●	●
	Key: ● Low impact to LAWA finances upon implementation, relative to other alternatives. ● Moderate impact to LAWA finances upon implementation, relative to other alternatives. ○ High impact to LAWA finances upon implementation, relative to other alternatives.								
<sup>1</sup> Alternatives 5 through 9 focus on specific types of improvements that could be paired with improvements from other alternatives (i.e., the airfield/terminal improvements in Alternatives 5 through 7 could be paired with ground access improvements from Alternatives 1, 2, 8, or 9, and the ground access improvements in Alternatives 8 and 9 could be paired with airfield/terminal improvements in Alternatives 1, 2, 5, 6, or 7). As paired, these alternatives would provide a complete set of airfield, terminal, and ground access improvements as is the case for the "fully integrated" Alternatives 1 through 4.									
Source: LAWA, 2012.									

Table 1-3

Description of Alternatives' Characteristics Related to Project Objectives

Project Objective	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9
	Move Rwy 6L/24R 260' North - Add Centerfield Taxiway - Improve Ground Access	No Increased Runway Separation - No Centerfield Taxiway - Improve Ground Access	LAX Master Plan Alt. D: Move Rwy 6R/24L 340' South - Add Centerfield Taxiway - Close CTA to Traffic - Improve Ground Access	No Airfield Improvements - Build CONRAC in Lot C - No Other Ground Access Improvements	Move Rwy 6L/24R 350' North - Add Centerfield Taxiway	Move Rwy 6L/24R 100' North - Add Centerfield Taxiway	Move Rwy 6R/24L 100' South - Add Centerfield Taxiway	Build CONRAC in Manchester Square - Improve Ground Access w/Busway	Build CONRAC in Manchester Square - Improve Ground Access w/APM
Preliminary Assessment of Alternatives' Relationship to Project Objectives									
<b>1. Provide North Airfield Improvements That Support Safe and Efficient Movement of Aircraft at LAX (i.e., meet FAA design standards for large aircraft, minimize need for operational waivers/restrictions, reduce potential for incursions, improve balance w/South Airfield, reduce RPZ in residential areas)</b>	Configuration of airfield under Alt. 1, including relocation of Rwy 6L/24R, would meet FAA design standards for ADG V aircraft (i.e., Boeing 747) and would accommodate ADG VI aircraft (i.e., Airbus A380) in good visibility conditions, but would not permit standardized operation of ADG VI aircraft on centerfield taxiway in all visibility conditions (i.e., poor visibility). Improvements proposed to Taxiway D and Twy E would improve ability of large aircraft to taxi to/from runways. Centerfield taxiway would provide substantial safety benefits. Extension of Rwy 6R/24L would help airfield balance. Westward shift in landing threshold on Rwy 6L/24R would remove residential areas from RPZ.	Without runway relocation and increased separation, north airfield would continue to require non-standard operating procedures for ADG V and ADG VI aircraft (i.e., would not meet FAA design standards). Improvements proposed to Taxiway D and Twy E would improve ability of large aircraft to taxi to/from runways. Without addition of centerfield taxiway, the associated safety benefits would not be realized; however, this alternative includes relocated/improved high-speed runway exits that provide some safety benefits. Extension of 6R/24L would help airfield balance. No westward shift in Rwy 6L/24R landing threshold would leave existing residences within RPZ.	Configuration of airfield under Alt 3, including relocation of Rwy 6R/24L 340' southward, would allow north airfield to meet FAA design standards for ADG VI on Rwy 6L/24R and ADG V aircraft on Rwy 6R/24L. Centerfield taxiway would provide substantial safety benefits. Extension of Rwy 6R/24L would help airfield balance. No westward shift in Rwy 6L/24R landing threshold would leave existing residences within RPZ.	This alternative assumes no airfield improvements other than federally-mandated Runway Safety Area (RSA) improvements. North airfield would continue to require non-standard operating procedures for ADG V and ADG VI aircraft (i.e., would not meet FAA design standards). Lack of centerfield taxiway or runway exit/taxiway improvements would preclude associated safety benefits. Reduced runway extension (Rwy 6R/24L) would continue to constrain departure of some large aircraft, requiring relatively more activity on south airfield. No westward shift in Rwy 6L/24R landing threshold would leave residential uses within RPZ.	Configuration of airfield under Alt 5, including relocation of Rwy 6L/24R 350' northward, would allow north airfield to meet ADG V and ADG VI separation standards for runways and taxiways. Centerfield taxiway would provide substantial safety benefits. Extension of Rwy 6R/24L would help airfield balance. Westward shift in Rwy 6L/24R landing threshold removes residential areas from RPZ.	Configuration of airfield under Alt 6, including relocation of Rwy 6L/24R 100' northward, would allow north airfield to meet ADG V separation standards during good weather/visibility, but only ADG IV (i.e., Boeing 757) standards on Rwy 6R/24L during poor weather/visibility. Centerfield taxiway would provide substantial safety benefits. Extension of Rwy 6R/24L would help airfield balance. Westward shift in Rwy 6L/24R landing threshold removes residential areas from RPZ.	Configuration of airfield under Alt 6, including relocation of Rwy 6R/24L 100' southward, would allow north airfield to meet ADG V separation standards during good weather/visibility, but only ADG IV design standards on Rwy 6R/24L for poor weather/visibility conditions. Centerfield taxiway would provide substantial safety benefits. Extension of Rwy 6R/24L would help airfield balance. No westward shift in Rwy 6L/24R landing threshold would leave existing residences in RPZ.	NA	NA

1. Introduction and Executive Summary

Table 1-3

Description of Alternatives' Characteristics Related to Project Objectives

	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9
<p><b>2. Improve Ground Access System to Better Accommodate Airport-Related Traffic, Especially as Related to CTA (i.e., types of improvements could include: (1) redesign CTA roadway segments/curbsides prone to traffic bottlenecks; (2) reduce traffic volumes within CTA by providing transportation facilities outside of CTA; (3) provide grade-separated/dedicated access route into CTA; and (4) integrate CTA with regional transit facilities)</b></p>	<p>Development of an Intermodal Transportation Facility (ITF) on 98th Street, provision of surface parking at Manchester Square (Century Blvd/Aviation Blvd), and the connection of those facilities, as well as the future Metro transit station nearby, to the CTA via a dedicated/elevated busway system would reduce traffic in and around the CTA.</p>	<p>Development of an ITF on 98th Street, provision of surface parking at Manchester Square, and the connection of those facilities, as well as the future Metro transit station nearby, to the CTA via a dedicated/elevated busway system would reduce traffic congestion in and around the CTA.</p>	<p>Closure of the CTA to private vehicles, development of a Ground Transportation Center (GTC) at Manchester Square and an Intermodal Transportation Center (ITC) at Continental City (Imperial Hwy/Aviation Blvd), and connection of those new facilities to the CTA via automated people mover (APM) systems would reduce traffic congestion in and around the CTA.</p>	<p>Under this alternative, no ground access improvements are proposed other than a Consolidated Rental Car Facility (CONRAC) at Lot C and a parking structure at Continental City, which would provide limited ground access benefits within the CTA.</p>	NA	NA	NA	<p>Development of an ITF on 98th Street and a CONRAC and parking at Manchester Square, and the connection of those facilities, as well as the future Metro transit station nearby, to the CTA via a dedicated/elevated busway system would reduce traffic in and around the CTA.</p>	<p>Development of an ITF on 98th Street and a CONRAC and parking at Manchester Square, and the connection of those facilities, as well as the future Metro transit station nearby, to the CTA via an APM system would reduce traffic in and around the CTA.</p>
<p><b>3. Maintain LAX's Position as the Premier International Gateway in Supporting and Advancing the Economic Growth and Vitality of the Los Angeles Region</b></p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California. Ground access improvements are also considered to be supportive of this objective.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California. Ground access improvements are also considered to be supportive of this objective.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California. Ground access improvements are also considered to be supportive of this objective.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California. Ground access improvements are also considered to be supportive of this objective.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California.</p>	<p>Airfield improvements at LAX that support the safe and efficient operation of large aircraft, which are the predominant aircraft type used for international travel, would help maintain LAX's position as international gateway to Southern California.</p>	<p>Ground access improvements at LAX are also considered to be supportive of the objective to maintain LAX's position as international gateway to Southern California.</p>	<p>Ground access improvements at LAX are also considered to be supportive of the objective to maintain LAX's position as international gateway to Southern California.</p>

**Table 1-3**  
**Description of Alternatives' Characteristics Related to Project Objectives**

	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9
<b>4. Plan Improvements That Do Not Result in More Than 153 Passenger Gates at 78.9 MAP</b>	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.	This alternative would not result in more than 153 passenger gates.
<b>5. Enhance Safety and Security at LAX</b>	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.	Regarding safety, see airfield improvements discussion above. Regarding security, the elements of this alternative would meet existing and future federal security requirements.
<b>6. Minimize Environmental Impacts on Surrounding Communities</b>	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.	A detailed analysis of the potential environmental impacts associated with this alternative is provided in the Draft EIR, along with the identification of existing LAX Master Plan commitments and mitigation measures and new mitigation measures to address the impacts - Table 1-6 lists those measures.

1. Introduction and Executive Summary

Table 1-3

Description of Alternatives' Characteristics Related to Project Objectives

	Fully Integrated Alternatives (Airfield, Terminal, and Ground Access Improvements Combined)				Other Options for Airfield Improvements <sup>1</sup>			Other Options for Ground Access Improvements <sup>1</sup>	
	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8	Alternative 9
<b>7. Produce an Improvement Program that is Efficient, Sustainable, Feasible, and Fiscally Responsible</b>	Based on a preliminary financial analysis, completion of the improvements under Alt. 1 would have a low potential for LAX improvement bonds to be adversely affected or for the passenger airline cost per emplaned passenger to substantially increase.	Based on a preliminary financial analysis, completion of the improvements under Alt. 2 would have a low potential for LAX improvement bonds to be adversely affected or for the passenger airline cost per emplaned passenger to substantially increase.	Based on a preliminary financial analysis, completion of the improvements under Alt. 3 would have a high potential for LAX improvement bonds to be adversely affected or for the passenger airline cost per emplaned passenger to substantially increase.	Based on a preliminary financial analysis, completion of the improvements under Alt. 4 would have a low potential for LAX improvement bonds to be adversely affected or for the passenger airline cost per emplaned passenger to substantially increase.	While Alt 5 focuses only on airfield improvements, it is generally anticipated that pairing it with the ground access improvements under Alts 1, 2, 8, or 9 would result in a low potential for LAX bonds to be adversely affected or passenger airline cost per emplaned passenger to substantially increase.	While Alt 6 focuses only on airfield improvements, it is generally anticipated that pairing it with the ground access improvements under Alts 1, 2, 8, or 9 would result in a low potential for LAX bonds to be adversely affected or passenger airline cost per emplaned passenger to substantially increase.	While Alt 7 focuses only on airfield improvements, it is generally anticipated that pairing it with the ground access improvements under Alts 1, 2, 8, or 9 would result in a low potential for LAX bonds to be adversely affected or passenger airline cost per emplaned passenger to substantially increase.	While Alt 8 focuses only on ground access improvements, it is generally anticipated that pairing it with the airfield improvements under Alts 1, 2, 5, 6, or 7 would result in a low potential for LAX bonds to be adversely affected or passenger airline cost per emplaned passenger to substantially increase.	While Alt 9 focuses only on ground access improvements, it is generally anticipated that pairing it with the airfield improvements under Alts 1, 2, 5, 6, or 7 would result in a low to moderate potential for LAX bonds to be adversely affected or passenger airline cost per emplaned passenger to substantially increase.

<sup>1</sup> Alternatives 5 through 9 focus on specific types of improvements that could be paired with improvements from other alternatives (i.e., the airfield/terminal improvements in Alternatives 5 through 7 could be paired with ground access improvements from Alternatives 1, 2, 8, or 9, and the ground access improvements in Alternatives 8 and 9 could be paired with airfield/terminal improvements in Alternatives 1, 2, 5, 6, or 7). As paired, these alternatives would provide a complete set of airfield, terminal, and ground access improvements as is the case for the "fully integrated" Alternatives 1 through 4.

Source: LAWA, 2012.

## 1.3 Organization of this EIR

This EIR follows the preparation and content guidance provided in CEQA and the State CEQA Guidelines. Listed below is a summary of the contents of each chapter of the report.

### **Chapter 1 -- Introduction and Executive Summary**

This chapter introduces the project background and project description, an overview of the report organization, a discussion of areas of known controversy and issues to be resolved, and a delineation of documents that are incorporated by reference into this EIR. Also included is a summary of the environmental analysis and identification of the environmentally superior alternative.

### **Chapter 2 -- Project Description**

This chapter provides a discussion of: the objectives associated with completion of the SPAS process; the specific characteristics of the SPAS alternatives considered and carried forward for evaluation in this EIR; and the SPAS alternatives considered, but rejected from further consideration. Also provided in this chapter is a description of the intended uses of this EIR.

### **Chapter 3 -- Environmental Setting**

This chapter provides an overview of the existing land use and environmental setting relevant to SPAS for each resource section. This chapter also briefly discusses other projects proposed in the nearby area that may, in conjunction with the SPAS alternatives, result in cumulative impacts on that existing setting.

### **Chapter 4 -- Environmental Impact Analysis**

The introductory portion of Chapter 4 describes the analytical framework for the environmental review of the SPAS alternatives. This chapter addresses 13 main topics:

- ◆ Aesthetics
- ◆ Air Quality
- ◆ Biological Resources
- ◆ Coastal Resources
- ◆ Cultural Resources
- ◆ Greenhouse Gases
- ◆ Hazards/Hazardous Materials
- ◆ Hydrology/Water Quality
- ◆ Land Use and Planning
- ◆ Noise
- ◆ Public Services
- ◆ Transportation
- ◆ Utilities

Within each environmental topic section, discussion of the following is provided:

- ◆ Introduction
- ◆ Methodology
- ◆ Existing Conditions
- ◆ Thresholds of Significance
- ◆ Applicable LAX Master Plan Commitments and Mitigation Measures
- ◆ Impacts Analysis

## **1. Introduction and Executive Summary**

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- ◆ Mitigation Measures
- ◆ Level of Significance After Mitigation (if applicable)

### **Chapter 5 -- Cumulative Impacts**

This chapter identifies and describes other past, present, and reasonably foreseeable projects that may, in conjunction with the SPAS alternatives, result in cumulative impacts. The cumulative impacts analysis addresses each of the 13 main topics evaluated in Chapter 4.

### **Chapter 6 -- Evaluation of Amendments to the LAX Specific Plan**

This chapter evaluates the environmental impacts associated with amendments to the LAX Specific Plan, including a revision to Section 7.H that would require completion of passenger and airline surveys and studies, the results of which would help inform LAWA as to potential actions that could be taken to encourage airlines to provide increased domestic passenger service at other airports in the region, particularly those owned or operated by LAWA, as well as administrative amendments to the LAX Specific Plan that might be needed depending on the SPAS alternative.

### **Chapter 7 -- Other CEQA Considerations**

This chapter provides a discussion of significant irreversible environmental changes, such as the use of non-renewable resources, that would be caused by the SPAS alternative(s) and identifies significant environmental effects which cannot be avoided (i.e., mitigated to a level that is less than significant) if a particular SPAS alternative is implemented. This chapter also discusses impacts determined to be less than significant and growth inducing impacts associated with the SPAS alternatives.

### **Chapter 8 -- Organizations/Persons Consulted and List of Preparers**

This chapter provides a list of the individuals from the City of Los Angeles and contractors that performed key roles in the preparation and development of this Draft EIR, and a list of agencies, organizations, and individuals consulted during preparation of this Draft EIR.

### **Chapter 9 -- References**

This chapter provides a list containing a bibliography of documents used in the preparation of this Draft EIR.

### **Chapter 10 -- Acronyms**

This chapter provides a list of acronyms used in this Draft EIR.

## **1.4 Executive Summary of Environmental Impacts Related to SPAS**

**Table 1-4** summarizes the environmental impacts after mitigation of the SPAS alternatives as identified in Chapter 4, *Environmental Impacts Analysis*, of this EIR. Impacts associated with implementation of the alternatives include those directly associated with proposed physical improvements (e.g., impacts to biological resources that would occur from grading activities, impacts to aesthetics, views, light, and glare that would occur from development of new structures or modification of existing structures). Impacts associated with implementation of the alternatives also include those associated with proposed or anticipated changes in airport operations (e.g., noise impacts, air pollutant emissions from aircraft operations, traffic impacts from vehicles traveling to and from the airport). The majority of the operations-related impacts summarized in this section, and more fully addressed in Chapters 4 and 5, are primarily attributable to future growth in aircraft and passenger activity levels at LAX that are projected to occur independent of the SPAS alternatives. The Draft EIR analyzes and identifies mitigation for such impacts even though they are attributable to future growth not related to the proposed project.

Specifically, the impacts analyses completed for the SPAS project include an evaluation of conditions projected to occur upon completion (buildout) of each alternative compared to conditions that existed at the time the Notice of Preparation (NOP) for the Draft EIR was published (i.e., existing baseline conditions). The analyses of operations-related impacts, such as those pertaining to air quality, noise, and traffic, account for the growth in activity projected to occur between 2009 (56.5 MAP and 1,493 average daily aircraft operations [landings and takeoffs combined]) and 2025 (78.9 MAP and 1,937 average daily aircraft operations).<sup>13</sup> This 30 to 40 percent increase in aircraft and passenger activity at LAX is projected to occur regardless of SPAS (i.e., would occur even if none of the SPAS alternatives were implemented). The SPAS Draft EIR analysis evaluates how the improvements specific to each alternative would interact with that projected growth and delineates the differences, or the similarities, in impacts between alternatives.

As indicated in **Table 1-4**, impacts are anticipated to be less than significant after mitigation for all nine alternatives relative to most environmental topics. Unavoidable significant impacts are expected to occur for all alternatives relative to air quality, greenhouse gas emissions, human health risk, aircraft noise, construction equipment noise, on-airport surface transportation, and off-airport surface transportation.<sup>14</sup> With the exception of construction equipment noise impacts, the vast majority of the unavoidable significant impacts that occur under all alternatives are primarily attributable to the projected growth in airport activity. **Table 1-5** provides additional summary information regarding the nature and extent of the unavoidable significant impacts associated with the nine alternatives, including as related to the projected growth in airport activity.

**Table 1-6** provides specific references to the applicable LAX Master Plan commitments and mitigation measures, as well as new mitigation measures that are proposed to reduce or avoid environmental impacts associated with the SPAS alternatives, including mitigation measures that address cumulative impacts. The full text of such measures and commitments are provided in the respective environmental topic sections in Chapter 4.<sup>15</sup> A narrative summary discussion of impacts by topic (e.g., aesthetics, air quality, biological resources, etc.) is provided following **Table 1-6**.

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<sup>13</sup> The future passenger activity for LAX that is addressed within the SPAS Draft EIR for buildout of the SPAS alternatives in 2025 is 78.9 MAP, which is consistent with the regional growth projections in the adopted 2012 SCAG Regional Transportation Plan and the fact that all of the SPAS alternatives include (i) no more than 153 gates and (ii) the amendment of LAX Specific Plan Section 7.H requiring action to encourage further shifts in passenger and airline activity to other regional airports if the annual aviation activity analysis forecasts that the annual passengers for that year at LAX are anticipated to exceed 75 MAP, and requiring a Specific Plan Amendment Study if the annual aviation activity analysis forecasts that LAX annual passengers for that year are anticipated to exceed 78.9 MAP. The passenger activity level for LAX under baseline (2009) conditions within this Draft EIR is 56.5 MAP.

<sup>14</sup> The one notable exception is that no on-airport transportation impacts would occur under Alternative 3 because under that alternative, the CTA would be closed to private vehicles.

<sup>15</sup> Please see Section 5.5.7.2.10 in Chapter 5, *Cumulative Impacts*, for the full text of SPAS Mitigation Measure MM-SAF (SPAS)-1, FAR Part 77 Review, which addresses the cumulatively considerable contribution of Alternatives 1, 5, and 6 to impacts to aviation safety from building/structural penetrations of FAR Part 77 imaginary surfaces.

# 1. Introduction and Executive Summary

**Table 1-4**  
**Summary of Impacts By Topic**

Topic	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
Aesthetics	LS	LS	LS	LS	LS	LS	LS	LS	LS
Air Quality	SU	SU	SU	SU	SU	SU	SU	SU	SU
Biological Resources	SM	SM	SM	SM	SM	SM	SM	SM	SM
Coastal Resources	SM	SM	SM	SM	SM	SM	SM	NI	NI
Cultural Resources									
Historical Resources	LS	LS	SM	NI	LS	LS	LS	LS	SM
Archaeological Resources	SM	SM	SM	SM	SM	SM	SM	SM	SM
Greenhouse Gases	SU	SU	SU	SU	SU	SU	SU	SU	SU
Human Health Risk Assessment	SU	SU	SU	SU	SU	SU	SU	SU	SU
Safety	LS	LS	LS	LS	LS	LS	LS	LS	LS
Hazardous Materials	LS	LS	LS	LS	LS	LS	LS	LS	LS
Hydrology/Water Quality	SM	SM	LS	SM	SM	SM	SM	SM	SM
Land Use and Planning									
Plan Consistency	LS	LS	LS	LS	LS	LS	LS	LS	LS
Aircraft Noise Exposure	SU	SU	SU	SU	SU	SU	SU	NA <sup>1</sup>	NA <sup>1</sup>
Aircraft Noise	SU	SU	SU	SU	SU	SU	SU	NA <sup>1</sup>	NA <sup>1</sup>
Road Traffic Noise	LS	LS	LS	LS	NA <sup>2</sup>	NA <sup>2</sup>	NA <sup>2</sup>	LS	LS
Construction Traffic and Equipment Noise	SU	SU	SU	SU	SU	SU	SU	SU	SU
Transit Noise and Vibration	SM	SM	LS	NI	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	SM	LS
Fire Protection	LS	LS	LS	LS	LS	LS	LS	LS	LS
Law Enforcement	SM	SM	SM	LS	SM	SM	SM	SM	SM
On-Airport Transportation	SU	SU	NI	SU	NA <sup>4</sup>	NA <sup>4</sup>	NA <sup>4</sup>	SU	SU
Off-Airport Transportation	SU	SU	SU	SU	NA <sup>4</sup>	NA <sup>4</sup>	NA <sup>4</sup>	SU	SU
Energy	LS	LS	LS	LS	LS	LS	LS	LS	LS
Solid Waste	LS	LS	LS	LS	LS	LS	LS	LS	LS
Wastewater Generation	LS	LS	LS	LS	LS	LS	LS	LS	LS
Water Supply	LS	LS	LS	LS	LS	LS	LS	LS	LS

Notes:

NA = Not Applicable

NI = No Impact

LS = Less Than Significant Impact

SM = Significant Impact (but mitigable to Less Than Significant)

SU = Significant Unavoidable Impact

<sup>1</sup> Alternatives 8 and 9 focus on ground access improvements, which do not pertain to aircraft noise; however, assuming the ground access improvements under those alternatives would be paired with airfield improvements proposed under Alternative 1, 2, 5, 6, or 7, there would be significant unavoidable aircraft noise impacts, as shown for Alternatives 1, 2, 5, 6, and 7.

<sup>2</sup> Alternatives 5, 6, and 7 focus on airfield improvements, which do not pertain to road traffic noise; however, assuming the airfield improvements under those alternatives would be paired with ground access improvements proposed under Alternative 1, 2, 8, or 9, there would be less than significant road traffic noise impacts, as shown Alternatives 1, 2, 8, and 9.

<sup>3</sup> Alternatives 5, 6, and 7 focus on airfield improvements, which do not pertain to transit noise; however, assuming the airfield improvements under those alternatives would be paired with ground access improvements proposed under Alternative 1, 2, 8, or 9, there would be significant but mitigable transit noise impacts or less than significant transit noise impacts, as shown for Alternatives 1, 2, 8, and 9, depending upon which alternatives are paired.

<sup>4</sup> Alternatives 5, 6, and 7 focus on airfield improvements, which do not pertain to on- or -off-airport surface transportation; however, assuming the airfield improvements under those alternatives would be paired with ground access improvements proposed under Alternative 1, 2, 8, or 9, there would be significant unavoidable traffic impacts, as shown for Alternatives 1, 2, 8, and 9.

Source: CDM Smith, 2012.

**Table 1-5**  
**Summary Comparison of Unavoidable Significant Impacts**

Topic	Basis of Comparison	Impacts Associated With Each Alternative <sup>1</sup>								
		Alt. 1 Value	Alt. 2 Value	Alt. 3 Value	Alt. 4 Value	Alt. 5 Value	Alt. 6 Value	Alt. 7 Value	Alt. 8 Value	Alt. 9 Value
<b>Air Quality</b>										
Construction-Related Emissions <sup>2</sup>	CO (Threshold = 550 lbs/day)	1,422	568	1,869	191	1,576-1,669	1,259-1,352	1,097-1,190	617-1,625	661-1,669
	VOC (Threshold = 75 lbs/day)	296	117	369	39	328-344	262-279	228-245	125-337	133-345
	NO <sub>x</sub> (Threshold = 100 lbs/day)	3,418	1,399	4,765	509	3,782-4,047	3,034-3,299	2,648-2,913	1,540-3,924	1,663-4,047
	PM10 (Threshold = 150 lbs/day)	1,627	638	1,956	222	1,804-1,888	1,438-1,522	1,249-1,333	692-1,858	722-1,888
	PM2.5 (Threshold = 55 lbs/day)	249	98	309	34	276-290	220-234	191-205	107-285	112-290
Operations-Related Emissions <sup>3</sup>	SO <sub>2</sub> (Threshold = 150 lbs/day)	<b>893 to 1,036</b>	<b>860 to 1,080</b>	<b>997 to 1,136</b>	<b>921 to 1,272</b>	<b>894 to 999</b>	<b>865 to 1,019</b>	<b>896 to 1,061</b>	<b>860 to 1,080</b>	<b>860 to 1,080</b>
	PM10 (Threshold = 150 lbs/day)	<b>2,767 to 2,776</b>	<b>2,765 to 2,779</b>	<b>2,527 to 2,538</b>	<b>2,610 to 2,634</b>	<b>2,510 to 2,776</b>	<b>2,508 to 2,777</b>	<b>2,511 to 2,781</b>	<b>2,515 to 2,530</b>	<b>2,510 to 2,525</b>
	PM2.5 (Threshold = 55 lbs/day)	<b>203 to 212</b>	<b>201 to 216</b>	<b>153 to 164</b>	<b>173 to 197</b>	<b>149 to 210</b>	<b>147 to 211</b>	<b>149 to 215</b>	<b>147 to 162</b>	<b>146 to 161</b>
Greenhouse Gas Emissions	Reduction in per capita GHG emissions at project buildout compared to baseline conditions (Threshold = Minimum of 16% reduction)	13.06%	13.69%	13.32%	14.29%	13.05%-15.00%	13.44%-15.40%	13.19%-15.15%	14.80%-15.61%	14.83%-15.64%
<b>Human Health Risk</b>	Acute Non-Cancer Hazard Index for Overall Off-Airport Receptors Relative to Acrolein From Aircraft Compared to Baseline (2009) Conditions (Threshold = 1.0)	3.0	2.2	3.1	3.9	2.9	2.8	2.4	na	na
<b>Aircraft Noise Exposure</b>	Population Newly Exposed to 65 <sub>≥</sub> CNEL in 2025 Compared to Baseline (2009) Conditions	<b>13,160</b>	<b>14,039</b>	<b>13,156</b>	<b>14,404</b>	<b>12,861</b>	<b>13,607</b>	<b>13,891</b>	na	na
	Homes Newly Exposed to 65 <sub>≥</sub> CNEL in 2025 Compared to Baseline (2009) Conditions	<b>4,370</b>	<b>4,531</b>	<b>4,508</b>	<b>4,603</b>	<b>4,315</b>	<b>4,462</b>	<b>4,485</b>		
<b>Construction Noise</b>	Types of construction activities posing potential for temporary significant noise impacts to sensitive receptors nearby, including airfield improvements (AI), ground access improvements (GAI), and use of construction staging areas (CSA)	AI, GAI, CSA	GAI, CSA	GAI, CSA	GAI, CSA	AI, --- <sup>4</sup> , CSA	AI, --- <sup>4</sup> , CSA	--- <sup>4</sup> , CSA	--- <sup>4</sup> , GAI, CSA	--- <sup>4</sup> , GAI, CSA
<b>On-Airport Transportation</b>	Number of on-airport facilities (i.e., CTA curbsides, intersections, or roadway links) significantly impacted in 2025 with no feasible mitigation available	<b>1 (Intersection of World Way South and Center Way)</b>	<b>1 (Intersection of World Way South and Center Way)</b>	0 (CTA closed to private vehicles)	<b>1 (Intersection of World Way South and Center Way)</b>	na	na	na	<b>1 (Intersection of World Way South and Center Way)</b>	<b>1 (Intersection of World Way South and Center Way)</b>
<b>Off-Airport Transportation</b>	Number of off-airport facilities (i.e., intersections and CMP facilities) significantly impacted relative to Baseline (2010 and no airport growth) conditions with no feasible mitigation available	1 (Intersection)	1 (Intersection)	12 (11 Intersections and 1 CMP facility)	2 (Intersections)	na	na	na	2 (Intersections)	2 (Intersections)
	Number of off-airport facilities (i.e., intersections and CMP facilities) significantly impacted relative to Future (2025 with airport growth) conditions with no feasible mitigation available	<b>43 (39 Intersections and 4 CMP Facilities)</b>	<b>43 (39 Intersections and 4 CMP Facilities)</b>	<b>42 (37 Intersections and 5 CMP Facilities)</b>	<b>45 (40 Intersections and 5 CMP Facilities)</b>	na	na	na	<b>48 (44 Intersections and 4 CMP Facilities)</b>	<b>48 (44 Intersections and 4 CMP Facilities)</b>

<sup>1</sup> Impacts identified in **Bold** type are primarily attributable to future growth in airport activity that will occur regardless of the SPAS alternatives. Also, relative to off-airport transportation, significant impacts are primarily the result of the combination of increased airport activity levels and increased regional background traffic projected to occur by 2025.

<sup>2</sup> Construction emissions shown for Alternatives 5 through 9 represent ranges of potential emissions depending on which set of other airfield, terminal, or ground access improvements each alternative is paired with - see Table 4.2-10 in Section 4.2, *Air Quality*.

<sup>3</sup> The ranges of emissions shown for each alternative are based on the analysis of aircraft-related emissions that accounted for differences in airfield activities under different weather/visibility conditions. The low end of the range typically represents good visibility with less spacing required between aircraft, and the high end of the emission range typically represents poor weather conditions with greater spacing between aircraft and more ground delay time - see Table 4.2-13 in Section 4.2, *Air Quality*.

<sup>4</sup> Alternative 5 through 9 focus on airfield improvements or ground access improvements, but are assumed to be paired with the counterpart improvements of other alternatives in order to provide a complete set of improvements. Although no construction noise impacts are noted for Alternatives 5 through 7 relative to ground access improvements, and no impacts are noted for Alternatives 8 and 9 relative to airfield improvements, such impacts would likely occur depending on which other improvements each of those alternatives is paired with.

Source: CDM Smith, 2012.

**1. Introduction and Executive Summary**

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Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Aesthetics</b>									
<b>LAX Master Plan Commitments</b>									
DA-1. Provide and Maintain Airport Buffer Areas	X	X	X	X	X	X	X	X	X
DA-2. Update and Integrate Design Plans and Guidelines	X	X	X	X	X	X	X	X	X
LU-2. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion	X	X	X	X				X	X
LU-4. Neighborhood Compatibility Program	X	X	X	X	X	X	X	X	X
LI-2. Use of Non-Glare Generating Building Materials	X	X	X	X	X	X	X	X	X
LI-3. Lighting Controls	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM-DA-1. Construction Fencing	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
MM-HA (SPAS)-1. Preservation of Historic Resources: Theme Building and Setting			X						
MM-HA (SPAS)-2. Preservation of Historic Resources: Theme Building and Setting									X
<b>Air Quality</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures<sup>1</sup></b>									
MM-AQ-1. LAX Master Plan Mitigation Plan for Air Quality, Framework	X	X	X	X	X	X	X	X	X
MM-AQ-2. LAX Master Plan Mitigation Plan for Air Quality, Construction-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
MM-AQ-3. LAX Master Plan Mitigation Plan for Air Quality, Transportation-Related Mitigation Measures	X	X	X	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X
MM-AQ-4. LAX Master Plan Mitigation Plan for Air Quality, Operations-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.A., Electrification of Passenger Gates <sup>1</sup>	X	X	X	X	X	X	X	X <sup>3</sup>	X <sup>3</sup>
Community Benefits Agreement, Section X.F., Construction Equipment <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.K., PM2.5 <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.L., Rock-Crushing Operations and Construction Materials Stockpiles <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.M., Limits on Diesel Idling <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.N., Provision of Alternative Fuel <sup>1</sup>	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
None									
<b>Biological Resources</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
MM-BC-1. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area	X	X	X	X	X	X	X		

# 1. Introduction and Executive Summary

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
MM-BC-3. Conservation of Floral Resources: Mature Tree Replacement	X	X	X	X	X	X	X	X	X
MM-ET-3. El Segundo Blue Butterfly Conservation: Dust Control	X	X	X	X	X	X	X		
MM-ET-4. El Segundo Blue Butterfly Conservation: Habitat Restoration	X	X	X	X	X	X	X		
<b>SPAS Mitigation Measures</b>									
MM-BIO (SPAS)-1. Replacement of State-Designated Sensitive Habitats	X	X	X	X	X	X	X		
MM-BIO (SPAS)-2. Conservation of Floral Resources: South Coast Branching Phacelia	X	X	X	X	X	X	X		
MM-BIO (SPAS)-3. Conservation of Floral Resources: Lewis' Evening Primrose	X	X	X	X	X	X	X		
MM-BIO (SPAS)-4. Conservation of Floral Resources: California Spineflower	X	X	X	X	X	X	X		
MM-BIO (SPAS)-5. Conservation of Floral Resources: Mesa Horkelia	X	X	X	X	X	X	X		
MM-BIO (SPAS)-6. Conservation of Floral Resources: Orcutt's Pincushion	X	X	X	X	X	X	X		
MM-BIO (SPAS)-7. Conservation of Floral Resources: Southern Tarplant	X	X	X	X	X	X	X	X	X
MM-BIO (SPAS)-8. Conservation of Faunal Resources: Sensitive Reptiles, Arthropods, and Gastropods	X	X	X	X	X	X	X		
MM-BIO (SPAS)-9. Conservation of Faunal Resources: Loggerhead Shrike	X	X	X	X	X	X	X		
MM-BIO (SPAS)-10. Conservation of Faunal Resources: Burrowing Owl	X	X	X	X	X	X	X	X	X
MM-BIO (SPAS)-11. Conservation of Floral Resources: Mature Tree Replacement - Nesting Raptors	X	X	X	X	X	X	X	X	X
MM-BIO (SPAS)-12. Conservation of Faunal Resources: Nesting Birds/Raptors	X	X	X	X	X	X	X	X	X
MM-BIO (SPAS)-13. Replacement of Jurisdictional Aquatic Features	X				X	X			
MM-BIO (SPAS)-14. Replacement of Habitat Units	X	X	X	X	X	X	X	X	X
<b>Coastal Resources</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
MM-BC-1. Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area	X	X	X	X	X	X	X		
MM-ET-3. El Segundo Blue Butterfly Conservation: Dust Control	X	X	X	X	X	X	X		
MM-ET-4. El Segundo Blue Butterfly Conservation: Habitat Restoration	X	X	X	X	X	X	X		
<b>SPAS Mitigation Measures</b>									
MM-BIO (SPAS)-1. Replacement of State-Designated Sensitive Habitats	X	X	X	X	X	X	X		
MM-BIO (SPAS)-2. Conservation of Floral Resources: South Coast Branching Phacelia	X	X	X	X	X	X	X		
MM-BIO (SPAS)-3. Conservation of Floral Resources: Lewis' Evening Primrose	X	X	X	X	X	X	X		
MM-BIO (SPAS)-4. Conservation of Floral Resources: California Spineflower	X	X	X	X	X	X	X		
MM-BIO (SPAS)-5. Conservation of Floral Resources: Mesa Horkelia	X	X	X	X	X	X	X		
MM-BIO (SPAS)-6. Conservation of Floral Resources: Orcutt's Pincushion	X	X	X	X	X	X	X		
MM-BIO (SPAS)-8. Conservation of Faunal Resources: Sensitive Reptiles and Arthropods	X	X	X	X	X	X	X		
MM-BIO (SPAS)-9. Conservation of Faunal Resources: Loggerhead Shrike	X	X	X	X	X	X	X		
MM-BIO (SPAS)-10. Conservation of Faunal Resources: Burrowing Owl	X	X	X	X	X	X	X		

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Cultural Resources</b>									
<b>LAX Master Plan Commitments</b>									
HR-1. Preservation of Historic Resources	X	X	X		X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
MM-HA (SPAS)-1. Preservation of Historic Resources: Theme Building and Setting			X						
MM-HA (SPAS)-2. Preservation of Historic Resources: Theme Building and Setting									X
MM-HA (SPAS)-3. Preservation of Historic Resources: Union Savings and Loan Building			X						
MM-HA (SPAS)-4. Conformance with LAX Master Plan Archaeological Treatment Plan	X	X	X	X	X	X	X	X	X
<b>Greenhouse Gases</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
MM-AQ-1. LAX Master Plan Mitigation Plan for Air Quality, Framework	X	X	X	X	X	X	X	X	X
MM-AQ-2. LAX Master Plan Mitigation Plan for Air Quality, Construction-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
MM-AQ-3. LAX Master Plan Mitigation Plan for Air Quality, Transportation-Related Mitigation Measures	X	X	X	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X
MM-AQ-4. LAX Master Plan Mitigation Plan for Air Quality, Operations-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.A., Electrification of Passenger Gates <sup>1</sup>	X	X	X	X	X	X	X	X <sup>3</sup>	X <sup>3</sup>
Community Benefits Agreement, Section X.N., Provision of Alternative Fuel <sup>1</sup>	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
None									
<b>Human Health Risk Assessment</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
MM-AQ-1. LAX Master Plan Mitigation Plan for Air Quality, Framework	X	X	X	X	X	X	X	X	X
MM-AQ-2. LAX Master Plan Mitigation Plan for Air Quality, Construction-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
MM-AQ-3. LAX Master Plan Mitigation Plan for Air Quality, Transportation-Related Mitigation Measures	X	X	X	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X	X
MM-AQ-4. LAX Master Plan Mitigation Plan for Air Quality, Operations-Related Mitigation Measures	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.A., Electrification of Passenger Gates <sup>1</sup>	X	X	X	X	X	X	X	X <sup>3</sup>	X <sup>3</sup>
Community Benefits Agreement, Section X.F., Construction Equipment <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.K., PM2.5 <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.L., Rock-Crushing Operations and Construction Materials Stockpiles <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.M., Limits on Diesel Idling <sup>1</sup>	X	X	X	X	X	X	X	X	X
Community Benefits Agreement, Section X.N., Provision of Alternative Fuel <sup>1</sup>	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
None									

# 1. Introduction and Executive Summary

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Safety</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
MM-SAF (SPAS)-1. Runway Protection Zone Reviews <sup>4</sup>	X				X	X			
<b>Hazardous Materials</b>									
<b>LAX Master Plan Commitments</b>									
HM-1. Ensure Continued Implementation of Existing Remediation Efforts	X	X	X	X	X	X	X	X	X
HM-2. Handling of Contaminated Materials Encountered During Construction	X	X	X	X	X	X	X	X	X
C-1. Establishment of a Ground Transportation/Construction Coordination Office	X	X	X	X				X	X
ST-9. Construction Deliveries	X	X	X	X				X	X
ST-12. Designated Truck Delivery Hours	X	X	X	X				X	X
ST-14. Construction Employee Shift Hours	X	X	X	X				X	X
ST-17. Maintenance of Haul Routes	X	X	X	X				X	X
ST-18. Construction Traffic Management Plan	X	X	X	X				X	X
ST-19. Closure Restrictions of Existing Roadways	X	X	X	X				X	X
ST-21. Construction Employee Parking Locations	X	X	X	X				X	X
ST-22. Designated Truck Routes	X	X	X	X				X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									
<b>Hydrology/Water Quality</b>									
<b>LAX Master Plan Commitments</b>									
HWQ-1. Conceptual Drainage Plan				X					
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
MM-HWQ (SPAS)-1. Conceptual Drainage Plan Revision and Update	X	X		X	X	X	X	X	X
<b>Land Use and Planning</b>									
<b>LAX Master Plan Commitments</b>									
LU-2. Establishment of a Landscape Maintenance Program for Parcels Acquired Due to Airport Expansion	X	X	X	X				X	X
LU-4. Neighborhood Compatibility Program	X	X	X	X	X	X	X	X	X
LU-5. Comply with City of Los Angeles Transportation Element Bicycle Plan	X	X	X	X	X	X	X	X	X

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
RBR-1. Residential and Business Relocation Program	X	X	X	X				X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM-LU-1. Implement Revised Aircraft Noise Mitigation Program	X	X	X	X	X	X	X		
MM-RBR-1. Phasing for Business Relocations	X	X	X	X				X	X
MM-RBR-2. Relocation Opportunities through Aircraft Noise Mitigation Program	X	X	X	X				X	X
<b>SPAS Mitigation Measures</b>									
None									
<b><u>Aircraft Noise (in addition to noise-related measures listed above in Land Use)</u></b>									
<b>LAX Master Plan Commitments</b>									
N-1. Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program	X	X	X	X	X	X	X		
<b>LAX Master Plan Mitigation Measures</b>									
MM-N-4. Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration	X	X	X	X	X	X	X		
MM-N-5. Conduct Part 161 Study to Make Over-Ocean Procedures Mandatory	X	X	X	X	X	X	X		
<b>SPAS Mitigation Measures</b>									
None									
<b><u>Road Traffic Noise</u></b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									
<b><u>Construction Traffic and Equipment Noise</u></b>									
<b>LAX Master Plan Commitments</b>									
ST-16. Designated Haul Routes	X	X	X	X	X	X	X	X	X
ST-18. Construction Traffic Management Plan	X	X	X	X	X	X	X	X	X
ST-22. Designated Truck Routes	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM-N-7. Construction Noise Control Plan	X	X	X	X	X	X	X	X	X
MM-N-8. Construction Staging	X	X	X	X	X	X	X	X	X
MM-N-9. Equipment Replacement	X	X	X	X	X	X	X	X	X
MM-N-10. Construction Scheduling	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
None									

# 1. Introduction and Executive Summary

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Transit Noise</b>									
<b>LAX Master Plan Commitments</b>									
None									
<b>LAX Master Plan Mitigation Measures</b>									
MM-N-11. Automated People Mover (APM) Noise Assessment and Control Plan			X						
<b>SPAS Mitigation Measures</b>									
MM-N (SPAS)-1. Elevated/Dedicated Busway Noise Assessment and Control Plan	X	X						X	
<b>Fire Protection</b>									
<b>LAX Master Plan Commitments</b>									
FP-1. LAFD Design Recommendations	X	X	X	X	X	X	X	X	X
PS-1. Fire and Police Facility Relocation Plan	X	X	X	X	X	X	X	X	X
PS-2. Fire and Police Facility Space and Siting Requirements	X	X	X	X	X	X	X	X	X
C-1. Establishment of a Ground Transportation/Construction Coordination Office	X	X	X	X	X	X	X	X	X
ST-9. Construction Deliveries	X	X	X	X	X	X	X	X	X
ST-12. Designated Truck Delivery Hours	X	X	X	X	X	X	X	X	X
ST-14. Construction Employee Shift Hours	X	X	X	X	X	X	X	X	X
ST-17. Maintenance of Haul Routes	X	X	X	X	X	X	X	X	X
ST-18. Construction Traffic Management Plan	X	X	X	X	X	X	X	X	X
ST-19. Closure Restrictions of Existing Roadways	X	X	X	X	X	X	X	X	X
ST-21. Construction Employee Parking Locations	X	X	X	X	X	X	X	X	X
ST-22. Designated Truck Routes	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									
<b>Law Enforcement</b>									
<b>LAX Master Plan Commitments</b>									
LE-1. Routine Evaluation of Manpower and Equipment Needs	X	X	X	X	X	X	X	X	X
LE-2. Plan Review	X	X	X	X	X	X	X	X	X
PS-1. Fire and Police Facility Relocation Plan	X	X	X		X	X	X	X	X
PS-2. Fire and Police Facility Space and Siting Requirements	X	X	X		X	X	X	X	X
C-1. Establishment of a Ground Transportation/Construction Coordination Office	X	X	X	X	X	X	X	X	X
ST-9. Construction Deliveries	X	X	X	X	X	X	X	X	X
ST-12. Designated Truck Delivery Hours	X	X	X	X	X	X	X	X	X
ST-14. Construction Employee Shift Hours	X	X	X	X	X	X	X	X	X
ST-17. Maintenance of Haul Routes	X	X	X	X	X	X	X	X	X
ST-18. Construction Traffic Management Plan	X	X	X	X	X	X	X	X	X
ST-19. Closure Restrictions of Existing Roadways	X	X	X	X	X	X	X	X	X

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
ST-21. Construction Employee Parking Locations	X	X	X	X	X	X	X	X	X
ST-22. Designated Truck Routes	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>	X	X	X	X	X	X	X	X	X
None									
<b>SPAS Mitigation Measures</b>									
MM-LE (SPAS)-1. LAWAPD Replacement Facilities	X	X	X		X	X	X	X	X
<b>On-Airport Transportation</b>									
<b>LAX Master Plan Commitments</b>									
ST-2. Non-Peak CTA Deliveries	X	X		X				X	X
ST-8. Limited Short-Term Lane Closures	X	X		X				X	X
ST-9. Construction Deliveries	X	X		X				X	X
ST-18. Construction Traffic Management Plan	X	X		X				X	X
ST-19. Closure Restrictions of Existing Roadways	X	X		X				X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM-ST-1. Require CTA Construction Vehicles to Use Designated Lanes	X	X		X				X	X
MM-ST-2. Modify CTA Signage	X	X		X				X	X
MM-ST-3. Develop Designated Shuttle Stops for Labor Buses and ITC-CTA Buses	X	X		X				X	X
<b>Bradley West Project Mitigation Measures</b>									
MM-ST (BWP)-2. Improve the Intersection of Center Way and World Way South	X	X		X				X	X
MM-ST (BWP)-3. Widen World Way Across from TBIT	X	X		X				X	X
<b>SPAS Mitigation Measures</b>									
MM-ST (SPAS)-1. Relocate Existing Taxi Loading Zone at TBIT	X	X		X				X	X
MM-ST (SPAS)-2. Change Departures and Arrivals Level Commercial Vehicle Curbside Operations	X	X		X				X	X
<b>Off-Airport Transportation</b>									
<b>LAX Master Plan Commitments</b>									
ST-9. Construction Deliveries	X	X	X	X				X	X
ST-12. Designated Truck Delivery Hours	X	X	X	X				X	X
ST-14. Construction Employee Shift Hours	X	X	X	X				X	X
ST-17. Maintenance of Haul Routes	X	X	X	X				X	X
ST-18. Construction Traffic Management Plan	X	X	X	X				X	X
ST-19. Closure Restrictions of Existing Roadways	X	X	X	X				X	X
ST-20. Stockpile Locations	X	X	X	X				X	X
ST-21. Construction Employee Parking Locations	X	X	X	X				X	X
ST-22. Designated Truck Routes	X	X	X	X				X	X
ST-24. Fair Share Contribution to CMP Improvements	X	X	X	X				X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM-ST-14. Ground Transportation/Construction Coordination Office Outreach Program	X	X	X	X				X	X

# 1. Introduction and Executive Summary

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>SPAS Mitigation Measures</b>									
MM-ST (SPAS)-1. Transportation Demand Management Program	X	X	X	X				X	X
MM-ST (SPAS)-2. Modify the Intersection of Airport Boulevard and Arbor Vitae Street/Westchester Parkway (Intersection 6)	X	X	X	X				X	X
MM-ST (SPAS)-3. Modify the Intersection of Airport Boulevard and Century Boulevard (Intersection 7)	X	X		X				X	X
MM-ST (SPAS)-4. Modify the Intersection of Arbor Vitae Street and Inglewood Avenue (Intersection 11)	X	X		X				X	X
MM-ST (SPAS)-5. La Brea Avenue and Arbor Vitae Street (Intersection 12)	X	X						X	X
MM-ST (SPAS)-6. Modify the Intersection of Aviation Boulevard and El Segundo Boulevard (Intersection 15)			X						
MM-ST (SPAS)-7. Modify the Intersection of Aviation Boulevard and Imperial Highway (Intersection 16)			X	X					
MM-ST (SPAS)-8. Modify the Intersection of Aviation Boulevard/Florence Avenue and Manchester Avenue (Intersection 17)	X	X	X	X				X	X
MM-ST (SPAS)-9. Modify the Intersection of La Brea Avenue and Centinela Avenue (Intersection 25)	X	X	X					X	X
MM-ST (SPAS)-10. Modify the Intersection of La Cienega Boulevard and Centinela Avenue (Intersection 26)	X	X	X	X				X	X
MM-ST (SPAS)-11. Modify the Intersection of Sepulveda Boulevard and Centinela Avenue (Intersection 28)			X						
MM-ST (SPAS)-12. La Brea Avenue/Hawthorne Boulevard and Century Boulevard (Intersection 34)	X	X		X				X	X
MM-ST (SPAS)-13. Inglewood Avenue and Century Boulevard (Intersection 35)	X	X	X	X				X	X
MM-ST (SPAS)-14. Prairie Avenue and Century Boulevard (Intersection 37)	X	X		X				X	X
MM-ST (SPAS)-15. Modify the Intersection of Sepulveda Boulevard and Century Boulevard (Intersection 38)	X	X	X	X				X	X
MM-ST (SPAS)-16. Modify the Intersection of La Cienega Boulevard and El Segundo Boulevard (Intersection 53)			X						
MM-ST (SPAS)-17. Modify the Intersection of La Brea Avenue and Florence Avenue (Intersection 57)	X	X	X	X				X	X
MM-ST (SPAS)-18. Modify the Intersection of La Cienega Boulevard and Florence Avenue (Intersection 58)	X	X	X	X				X	X
MM-ST (SPAS)-19. Modify the Intersection of Sepulveda Boulevard and Grand Avenue (Intersection 60)	X	X						X	X
MM-ST (SPAS)-20. Modify the Intersection of Hawthorne Boulevard and Imperial Avenue (Intersection 62)	X	X	X	X				X	X
MM-ST (SPAS)-21. Modify the Intersection of Inglewood Avenue and Imperial Highway (Intersection 66)	X	X	X	X				X	X
MM-ST (SPAS)-22. Prairie Avenue and Imperial Highway (Intersection 70)			X						
MM-ST (SPAS)-23. Modify the Intersection of Sepulveda Boulevard and Imperial Highway (Intersection 71)	X	X	X	X				X	X
MM-ST (SPAS)-24. Modify the Intersection of I-105 Ramps (east of Aviation Boulevard) and Imperial Highway (Intersection 74)			X						
MM-ST (SPAS)-25. Modify the Intersection of La Brea Avenue and Manchester Boulevard (Intersection 85)			X					X	X
MM-ST (SPAS)-26. Modify the Intersection of La Brea Avenue and Slauson Avenue (Intersection 87)	X	X	X	X				X	X
MM-ST (SPAS)-27. Modify the Intersection of La Cienega Boulevard and Manchester Boulevard (Intersection 90)			X					X	X
MM-ST (SPAS)-28. Modify the intersection of La Cienega Boulevard and Southbound I-405 Ramps (north of Century Boulevard) (Intersection 96)	X	X						X	X
MM-ST (SPAS)-29. Modify the Intersection of Sepulveda Boulevard and La Tijera Boulevard (Intersection 101)			X	X					
MM-ST (SPAS)-30. Modify the Intersection of Lincoln Boulevard and Manchester Boulevard (Intersection 105)			X						
MM-ST (SPAS)-31. Modify the Intersection of Ash Avenue and Manchester Avenue (Intersection 115)	X	X						X	X
MM-ST (SPAS)-32. Vicksburg Avenue and 96th Street (Intersection 143)	X	X						X	X
MM-ST (SPAS)-33. Modify the Intersection of Sepulveda Eastway and Westchester Parkway (Intersection 146)			X	X					

Table 1-6

LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
MM-ST (SPAS)-34. Modify the Intersection of Hindry Avenue and Manchester Boulevard (Intersection 159)	X	X	X	X				X	X
MM-ST (SPAS)-35. Modify the Intersection of Prairie Avenue and Manchester Boulevard (Intersection 169)	X	X	X	X				X	X
MM-ST (SPAS)-36. Modify the Intersection of Prairie Avenue and Lennox Boulevard (Intersection 197)	X	X	X	X				X	X
<b>Energy</b>									
<b>LAX Master Plan Commitments</b>									
E-1. Energy Conservation and Efficiency Program	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									
<b>Solid Waste</b>									
<b>LAX Master Plan Commitments</b>									
SW-1. Implement an Enhanced Recycling Program	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
MM SW-1. Provide Landfill Capacity <sup>5</sup>	X	X	X	X	X	X	X	X	X
<b>SPAS Mitigation Measures</b>									
None									
<b>Wastewater Generation</b>									
<b>LAX Master Plan Commitments</b>									
W-2. Enhance Existing Water Conservation Program	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									
<b>Water Supply</b>									
<b>LAX Master Plan Commitments</b>									
W-1. Maximize Use of Reclaimed Water	X	X	X	X	X	X	X	X	X
W-2. Enhance Existing Water Conservation Program	X	X	X	X	X	X	X	X	X
<b>LAX Master Plan Mitigation Measures</b>									
None									
<b>SPAS Mitigation Measures</b>									
None									

# 1. Introduction and Executive Summary

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Table 1-6

**LAX Master Plan Commitments, LAX Master Plan Mitigation Measures, and SPAS-Specific Mitigation Measures as Related to the SPAS Alternatives**

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	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>	<u>Alt. 8</u>	<u>Alt. 9</u>
<sup>1</sup>	LAWA and the LAX Coalition for Economic, Environmental and Educational Justice (LAX Coalition) have developed and entered into an agreement, the Community Benefits Agreement (CBA), to ensure that communities adversely affected by the LAX Master Plan Program also receive benefits as a result of implementation of the Program. The benefits and mitigations included in the CBA were negotiated independently from, and are not a part of, the LAX Master Plan Mitigation Monitoring and Reporting Program. The CBA contains a number of air quality mitigation measures, of which Sections X.A., X.F., X.K., X.L., X.M., and X.N. are applicable to SPAS.								
<sup>2</sup>	Alternatives 5, 6, and 7 focus on airfield improvements, and would not have any impacts related to ground transportation; however, assuming the airfield improvements under those alternatives would be paired with ground access improvements proposed under Alternative 1, 2, 8, or 9, there would be impacts to ground transportation that would subject to this mitigation measure.								
<sup>3</sup>	Alternatives 8 and 9 focus on ground access improvements, and would not have any impacts associated with aircraft gates; however, assuming the ground access improvements under those alternatives would be paired with airfield improvements proposed under Alternative 1, 2, 5, 6, or 7, there would be impacts to gates that would be subject to this mitigation measure.								
<sup>4</sup>	This measure would reduce the cumulatively considerable contribution to impacts to aviation safety from building/structural penetrations of FAR Part 77 imaginary surfaces.								
<sup>5</sup>	This measure would address cumulatively significant impacts associated with solid waste generation and disposal.								

Source: CDM Smith, 2012.

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### **Aesthetics**

Alternative 3 would include the greatest extent of development throughout the airport environment, including improvements within the Los Angeles/El Segundo Dunes, north airfield, CTA, Lot C, Manchester Square, and Continental City. These improvements would affect aesthetics and views from sensitive receptors within the CTA, Century Corridor/eastern boundary, and southern, western, and northern boundary areas. Within the CTA, improvements related to the APM and terminal improvements under Alternative 3 would result in significant impacts to focal views of the Theme Building. Implementation of Mitigation Measure MM-HA (SPAS)-1, Preservation of Historic Resources: Theme Building and Setting (Alternative 3), described in Section 4.1, *Aesthetics*, would reduce impacts to views associated with Alternative 3 within the CTA to a level that is less than significant.

Compared to Alternative 3, improvements that would affect aesthetics and views under Alternatives 1 and 2 would not be as extensive, particularly within the CTA, Manchester Square, and Continental City. Impacts to views of the Theme Building under Alternatives 1 and 2 would be less than significant. Ground access facilities associated with Alternative 3, including the CONRAC, APM, and GTC, would not be developed under these alternatives. Alternative 4 has limited improvements with the potential to affect visual resources, including a CONRAC in the Lot C area and a parking structure in Continental City.

Alternatives 5 through 7 focus on airfield and terminal improvements, including modifications to navigational aids. These improvements would largely take place on the airfield and within the CTA, and would be located at a substantial distance from surrounding view sensitive uses within the Century Corridor/eastern, southern, western, and northern boundary areas. Although the airfield modifications would be at different distances from the residential areas to the north depending upon the alternative, the impacts to the visual characteristics of the airport associated with these alternatives would be similar to the impacts associated with Alternatives 1 and 2. Impacts to views of the Theme Building under Alternatives 5 through 7 would be less than significant. Alternatives 8 and 9 focus on ground access improvements. In some instances, these improvements would be located within close proximity to sensitive receptors within the northern and Century Corridor/eastern boundary areas. Although the nature of the ground access improvements would differ, the impacts to visual resources in the Century Corridor/eastern boundary area under these alternatives would be similar to the impacts associated with Alternatives 1 and 2. Under Alternative 9, development of the APM within the CTA would result in significant impacts to views of the Theme Building within the CTA. Implementation of Mitigation Measure MM-HA (SPAS)-2, Preservation of Historic Resources: Theme Building and Setting (Alternative 9), described in Section 4.1, *Aesthetics*, would reduce impacts to views associated with Alternative 9 within the CTA to a level that is less than significant.

Regarding cumulative impacts, with the exception of the Airport Metro Connector Project, the cumulative projects would not affect views from a designated scenic highway, corridor, or parkway, or obstruct/diminish other valued focal or panoramic views. Elevated elements related to the Airport Metro Connector Project could affect views of the Theme Building within the CTA. Although the Airport Metro Connector Project may contribute to a cumulatively significant impact on views of the Theme Building depending on the alternative selected, as improvements within the CTA under Alternatives 1, 2, 5, 6, and 7 would take place on the airfield and north of Sky Way, and would not obstruct or degrade views of the Theme Building, the contribution of Alternatives 1, 2, 5, 6, and 7 would not be cumulatively considerable. In light of proposed Mitigation Measure MM-HA (SPAS)-1, Preservation of Historic Resources: Theme Building and Setting (Alternative 3), and Mitigation Measure MM-HA (SPAS)-2, Preservation of Historic Resources: Theme Building and Setting (Alternative 9), the contribution of Alternatives 3 and 9 to cumulative impacts would not be cumulatively considerable. Alternatives 4 and 8 do not include any improvements within the CTA and thus there would be no cumulative impact on aesthetic resources or views within the CTA.

### **Light and Glare**

All the alternatives would include improvements which would generate light and glare visible from some light-sensitive uses surrounding the airport property. Alternatives 1 through 7 would include airfield

## **1. Introduction and Executive Summary**

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improvements (runway, taxiway, and/or navigational aids) visible from some light-sensitive uses located along the southern, western and/or northern boundary areas. Alternatives 1 through 3 and 5 through 7 would include terminal improvements visible from some light-sensitive uses located in the southern and/or northern boundary areas. Alternatives 1 through 4, 8, and 9 would include ground access improvements visible from some light-sensitive uses located in the Century Corridor/eastern, southern, and/or northern boundary areas. Also, Alternatives 1, 2, 3, 8, and 9 would include a lit elevated transit system within the Century Corridor/eastern boundary area which would be visible from some hotels in the area; this system would include a dedicated busway under Alternatives 1, 2, and 8, and an APM under Alternatives 3 and 9. Finally, Alternatives 1, 5, and 6 would include the relocation of Lincoln Boulevard and associated street lights, which would be visible from some light-sensitive uses in the northern boundary area.

Alternative 3 would include the greatest number of improvements overall and would generate light and glare visible by the greatest number of sensitive receptors. Relative to the alternatives with airfield components (i.e., Alternatives 1 through 7), as runway lighting and navigational aids would not generate light and glare that would spillover onto adjacent areas, light and glare impacts among these alternatives would be similar, regardless of the distance of the airfield improvements to residential uses. Similarly, the terminal improvements associated with Alternatives 1 through 3 and 5 through 7 would be at substantial distance from sensitive receptors and terminal-related light and glare impacts would be similar among these alternatives. With respect to the alternatives with ground access components (i.e., Alternatives 1 through 4, 8, and 9), Alternative 3 would have the greatest light and glare impacts, and Alternative 4 would have the fewest. Ground access-related light and glare impacts of Alternatives 1, 2, 8, and 9 would be similar to one another. None of the alternatives would result in a change in lighting or lighting intensity such that light would spill off and affect light-sensitive areas, and none would result in a substantial new source of glare which would adversely affect nighttime views in adjacent areas sensitive to glare. Therefore, light and glare impacts under all the alternatives would be less than significant.

Cumulative impacts related to light and glare as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Air Quality**

**Table 1-7** and the text below summarize the conclusions regarding significant air quality impacts, all of which are based on the comparisons to baseline (2009) conditions or, in the case of construction impacts, the SCAQMD construction emission thresholds.

**Table 1-7**  
**Summary of Air Quality Impacts After Mitigation**

	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Construction Emissions</b>									
CO	SU	SU	SU	LS	SU	SU	SU	SU	SU
VOC	SU	SU	SU	LS	SU	SU	SU	SU	SU
NO <sub>x</sub>	SU	SU	SU	SU	SU	SU	SU	SU	SU
SO <sub>2</sub>	LS	LS	LS	LS	LS	LS	LS	LS	LS
PM10	SU	SU	SU	SU	SU	SU	SU	SU	SU
PM2.5	SU	SU	SU	LS	SU	SU	SU	SU	SU
<b>Construction Concentrations</b>									
CO	LS	LS	LS	LS	LS	LS	LS	LS	LS
NO <sub>2</sub>	SU	SU	SU	SU	SU	SU	SU	SU	SU
SO <sub>2</sub>	LS	LS	LS	LS	LS	LS	LS	LS	LS
PM10	SU	SU	SU	SU	SU	SU	SU	SU	SU
PM2.5	LS	LS	LS	LS	LS	LS	LS	LS	LS
<b>Operational Emissions</b>									
CO	LS	LS	LS	LS	LS	LS	LS	LS	LS
VOC	LS	LS	LS	LS	LS	LS	LS	LS	LS
NO <sub>x</sub>	LS	LS	LS	LS	LS	LS	LS	LS	LS
SO <sub>2</sub>	SU	SU	SU	SU	SU	SU	SU	SU	SU
PM10	SU	SU	SU	SU	SU	SU	SU	SU	SU
PM2.5	SU	SU	SU	SU	SU	SU	SU	SU	SU
<b>Operational Concentrations</b>									
CO	LS	LS	LS	LS	LS	LS	LS	LS	LS
NO <sub>2</sub>	SU	SU	SU	SU	SU	SU	SU	SU	SU
SO <sub>2</sub>	LS	LS	LS	LS	LS	LS	LS	LS	LS
PM10	SU	SU	SU	SU	SU	SU	SU	SU	SU
PM2.5	SU	SU	SU	SU	SU	SU	SU	SU	SU

Notes:

LS = Less than Significant Impact

SU = Significant Unavoidable Impact

Mitigation measures are LAX Master Plan Mitigation Measures MM-AQ-1, MM-AQ-2, MM-AQ-3, MM-AQ-4 and components from Section X, Air Quality, of the LAX Master Plan Community Benefits Agreement.

Source: CDM Smith, 2012.

## Alternative 1

Alternative 1 construction emissions of carbon monoxide (CO), volatile organic compounds (VOC), oxides of nitrogen (NO<sub>x</sub>), particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM10), and particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (PM2.5) would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of sulfur dioxide (SO<sub>2</sub>), PM10, and PM2.5 would be significant and operational concentrations of nitrogen dioxide (NO<sub>2</sub>), PM10, and PM2.5 resulting from implementation of Alternative 1 would be significant. Therefore, air quality impacts of Alternative 1 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 1 would result in a cumulatively considerable impact on air quality.

## ***1. Introduction and Executive Summary***

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### **Alternative 2**

Alternative 2 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 2 would be significant. Therefore, air quality impacts of Alternative 2 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 2 would result in a cumulatively considerable impact on air quality.

### **Alternative 3**

Alternative 3 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 3 would be significant. Therefore, air quality impacts of Alternative 3 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 3 would result in a cumulatively considerable impact on air quality.

### **Alternative 4**

Alternative 4 construction emissions of NO<sub>x</sub> and PM10 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 4 would be significant. Therefore, air quality impacts of Alternative 4 would be significant for NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 4 would result in a cumulatively considerable impact on air quality.

### **Alternative 5**

Alternative 5 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 5 would be significant. Therefore, air quality impacts of Alternative 5 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 5 would result in a cumulatively considerable impact on air quality.

### **Alternative 6**

Alternative 6 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 6 would be significant. Therefore, air quality impacts of Alternative 6 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 6 would result in a cumulatively considerable impact on air quality.

**Alternative 7**

Alternative 7 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 7 would be significant. Therefore, air quality impacts of Alternative 7 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 7 would result in a cumulatively considerable impact on air quality.

**Alternative 8**

Alternative 8 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 8 would be significant. Therefore, air quality impacts of Alternative 8 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 8 would result in a cumulatively considerable impact on air quality.

**Alternative 9**

Alternative 9 construction emissions of CO, VOC, NO<sub>x</sub>, PM10, and PM2.5 would be significant. Construction-related concentrations would be significant for NO<sub>2</sub> and PM10. Operational emissions of SO<sub>2</sub>, PM10, and PM2.5 would be significant, and operational concentrations of NO<sub>2</sub>, PM10, and PM2.5 resulting from implementation of Alternative 9 would be significant. Therefore, air quality impacts of Alternative 9 would be significant for CO, VOC, NO<sub>x</sub>, NO<sub>2</sub>, SO<sub>2</sub>, PM10, and PM2.5. Even with implementation of feasible mitigation measures, these impacts would remain significant and are therefore unavoidable. With respect to cumulative impacts, overall, construction and operation of Alternative 9 would result in a cumulatively considerable impact on air quality.

**Biological Resources**

A summary of the impacts to biological resources associated with the SPAS alternatives is provided in **Table 1-8** and in the text below. **Table 1-8** identifies impacts following the implementation of SPAS-specific mitigation measures, which are identified in Section 4.3.7, *Biological Resources*.

**Table 1-8**  
**Summary of Biological Resources Impacts After Mitigation**

Habitats/Vegetation Associations	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>LAX East of Pershing</b>									
Disturbed Southern Foredune	NI	NI	NI	NI	NI	NI	NI	NI	NI
Disturbed Southern Dune Scrub	SM	SM	SM	SM	SM	SM	SM	SM	SM
Encelia Scrub	LS	LS	LS	LS	LS	LS	NI	NI	NI
California Bulrush Marsh	LS <sup>1</sup>	NI	NI	NI	LS <sup>1</sup>	LS <sup>1</sup>	NI	NI	NI
Sandbar Willow Thicket	LS <sup>1</sup>	NI	NI	NI	LS <sup>1</sup>	NI	NI	NI	NI
Ruderal (Argo Drainage Channel)	LS <sup>1</sup>	NI	NI	NI	LS <sup>1</sup>	LS <sup>1</sup>	NI	NI	NI
Ruderal	LS	LS	LS	LS	LS	LS	LS	LS	LS

# 1. Introduction and Executive Summary

Table 1-8

Summary of Biological Resources Impacts After Mitigation

Habitats/Vegetation Associations	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Los Angeles/EI Segundo Dunes</b>									
Disturbed Southern Foredune	SM	SM	SM	SM	SM	SM	SM	NI	NI
Disturbed Southern Dune Scrub	NI	NI	NI	NI	NI	NI	NI	NI	NI
Ruderal	LS	NI	LS	NI	LS	LS	NI	NI	NI
<b>Other Impacts</b>									
EI Segundo Blue Butterfly Habitat	LS	LS	LS	LS	LS	LS	LS	NI	NI
Loss of Habitat Units	SM	SM	SM	SM	SM	SM	SM	SM	SM
Removal of Mature Trees	LS	LS	LS	LS	LS	LS	LS	LS	LS
<b>Sensitive Plants</b>									
Lewis' Evening Primrose	SM	SM	SM	SM	SM	SM	SM	NI	NI
California Spineflower	SM	SM	SM	SM	SM	SM	SM	NI	NI
Southern Tarplant	SM	SM	SM	SM	SM	SM	SM	SM	SM
South Coast Branching Phacelia	SM	SM	SM	SM	SM	SM	SM	NI	NI
Mesa Horkelia	SM	SM	SM	SM	SM	SM	SM	NI	NI
Orcutt's Pincushion	SM	SM	SM	SM	SM	SM	SM	NI	NI
<b>Sensitive Wildlife</b>									
Arthropods/Gastropods/Reptiles	SM	SM	SM	SM	SM	SM	SM	NI	NI
Loggerhead Shrike	SM	SM	SM	SM	SM	SM	SM	NI	NI
Burrowing Owl	SM	SM	SM	SM	SM	SM	SM	SM	SM
San Diego Black-tailed Jackrabbit	LS	LS	LS	LS	LS	LS	LS	NI	NI
EI Segundo Blue Butterfly	LS	LS	LS	LS	LS	LS	LS	NI	NI
Nesting Birds/Raptors	SM	SM	SM	SM	SM	SM	SM	SM	SM
<b>Jurisdictional Aquatic Features</b>									
	SM	NI	NI	NI	SM	SM	NI	NI	NI
<b>Indirect Impacts</b>									
	LS	LS	LS	LS	LS	LS	LS	LS	LS

Notes:

NI = No Impact

LS = Less Than Significant Impact

SM = Significant Impact (but mitigable to Less Than Significant)

<sup>1</sup> The impact to this habitat/vegetation association is further addressed in association with jurisdictional aquatic features.

Source: CDM Smith, Glenn Lukos Associates, 2012.

## Habitats/Vegetation Associations

Alternatives 1 through 7 would each affect a different quantity of the vegetation associations within undeveloped areas of LAX east of Pershing Drive (specifically the north airfield and Construction Staging Areas A, B, C, D, and G); however, the scale of the impacts associated with each alternative is similar. Alternatives 8 and 9 would not have an impact on undeveloped areas associated with the north airfield, and impacts to undeveloped areas would be limited to Construction Staging Areas A, B, C, D, and G. Under all of the alternatives, impacts to Disturbed Southern Dune Scrub would be significant prior to mitigation. Significant impacts associated with Alternatives 1 through 9 to Disturbed Southern Dune Scrub would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Alternatives 1 through 7 would each affect a different quantity of the vegetation associations within the Los Angeles/EI Segundo Dunes, including state-designated sensitive habitats (i.e., Disturbed Southern Foredune); however, the scale of the impacts associated with each alternative is similar, and all impacts

to state-designated sensitive habitats would be significant prior to mitigation. Alternatives 8 and 9 do not propose relocation of navigational aids and, therefore, there would be no impacts in the Los Angeles/EI Segundo Dunes under Alternatives 8 and 9. All potentially significant impacts associated with Alternatives 1 through 7 to state-designated sensitive habitats would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Construction activities associated with Alternatives 1 through 7 would occur within and adjacent to the EI Segundo Blue Butterfly Habitat Restoration Area. With implementation of the applicable LAX Master Plan mitigation measure, no significant impacts would occur. No impacts to the Habitat Restoration Area would occur under Alternatives 8 and 9.

The relocation of Lincoln Boulevard under Alternatives 1, 5, and 6 would result in the removal of mature trees. In addition, mature trees may be removed in conjunction with the use of Construction Staging Areas B, C, and D under all of the alternatives. With implementation of the applicable LAX Master Plan mitigation measure, no significant impacts would occur.

There would be a loss of habitat units under all of the alternatives. Impacts associated with habitat loss would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

With implementation of mitigation, cumulative impacts to sensitive habitat/vegetation as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Sensitive Plants**

Alternatives 1, 2, 3, 5, 6, and 7 each have similar potential to have a significant impact on Lewis' evening primrose within the western end of the north airfield, as each of these alternatives proposes relocation of runways and/or taxiways in the north airfield. There are no potential impacts to Lewis' evening primrose associated with runway/taxiway relocation for Alternatives 4, 8, and 9; however, Alternative 4 could potentially impact Lewis' evening primrose in the airfield due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to Lewis' evening primrose in the north airfield would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Alternatives 1 through 9 each have similar potential to have a significant impact on southern tarplant in Construction Staging Areas B, C, and D. All such impacts would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Alternatives 1 through 7 each have similar potential to have a significant impact on Lewis' evening primrose, California spineflower, south coast branching phacelia, mesa horkelia, and Orcutt's pincushion in the Los Angeles/EI Segundo Dunes due to navigational aids relocation. All such impacts would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*. Alternatives 8 and 9 would not have an impact on sensitive plants within the Los Angeles/EI Segundo Dunes.

With implementation of mitigation, cumulative impacts to sensitive plant species as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Sensitive Wildlife**

Alternatives 1 through 7 each have similar potential to have a significant impact on sensitive arthropods, gastropods, and reptiles in the Los Angeles/EI Segundo Dunes due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to sensitive arthropods, gastropods, and reptiles would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*. No impacts to sensitive arthropods, gastropods, and reptiles would occur under Alternatives 8 and 9.

## ***1. Introduction and Executive Summary***

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Alternatives 1 through 7 each have similar potential to have a significant impact on loggerhead shrike in the airfield and in the Los Angeles/El Segundo Dunes due to navigational aids relocation. All potentially significant impacts associated with Alternatives 1 through 7 to loggerhead shrike would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*. No impacts to loggerhead shrike would occur under Alternatives 8 and 9.

Alternatives 1, 5, and 6 each have similar potential to have a significant impact on burrowing owl from construction in the airfield, the Argo Drainage Channel, and the Los Angeles/El Segundo Dunes, as well as from the use of construction staging areas. Alternatives 2, 3, 4, and 7 would have similar potential to have an impact on burrowing owl from construction in the airfield and the Los Angeles/El Segundo Dunes, as well as from the use of construction staging areas, but would not have potential to affect burrowing owl within the Argo Drainage Channel. Alternatives 8 and 9 would have similar potential to have an impact on burrowing owl from use of the construction staging areas. All potentially significant impacts to burrowing owl would be reduced to a level that is less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Alternatives 1 through 9 each have similar potential to impact San Diego black-tailed jackrabbit, but impacts would be less than significant. No impacts to San Diego black-tailed jackrabbit would occur under Alternatives 8 and 9.

Alternatives 1 through 7 would each involve the relocation of navigational aids, some of which would be located within the Habitat Restoration Area for the El Segundo blue butterfly. The navigational aids relocation would occur in an area that is occupied by this species, albeit at very low densities. With implementation of applicable LAX Master Plan mitigation measures, identified in Section 4.3, *Biological Resources*, no significant impacts would occur. No impacts to El Segundo blue butterfly would occur under Alternatives 8 and 9.

Alternatives 1 through 9 each have similar potential to have a significant impact on nesting migratory birds and raptors, and mature trees that may be used as raptor nesting sites, in the construction staging areas. All potentially significant impacts associated with Alternatives 1 through 9 to nesting migratory birds and mature trees that may be used as nesting raptor sites would be less than significant with implementation of mitigation measures, as discussed in Section 4.3, *Biological Resources*.

Cumulative impacts to burrowing owl, mature trees that could be used by nesting raptors, as well as nesting migratory birds resulting from the combination of any of the SPAS alternatives and other cumulative projects would be significant. With implementation of mitigation measures described in Section 4.3, *Biological Resources*, the contribution of the SPAS alternatives to significant cumulative impacts would not be cumulatively considerable.

### **Jurisdictional Aquatic Features**

Alternatives 1 and 5 would require major improvements to the entire length of the Argo Drainage Channel, and Alternative 6 would require modifications to a portion of the channel. These modifications would result in a significant impact with respect to U.S. Army Corps of Engineers (USACOE) jurisdictional waters and wetlands and California Department of Fish and Game (CDFG) jurisdictional streambed and associated vegetated riparian habitat. These impacts would be reduced to a level that is less than significant with implementation of mitigation, as discussed in Section 4.3, *Biological Resources*.

Regarding cumulative impacts, there are no other projects that would result in impacts within the Argo Drainage Channel, nor are there any reasonably foreseeable projects within the geographic scope of analysis that would impact jurisdictional aquatic features. Nevertheless, given the historical loss of jurisdictional aquatic features in the vicinity, including at Playa Vista, cumulative impacts to jurisdictional aquatic features are considered significant. With implementation of the mitigation measure described in Section 4.3, *Biological Resources*, the contribution of Alternatives 1, 5, and 6 to this significant cumulative impact would not be cumulatively considerable.

No impacts to jurisdictional aquatic features would occur as a result of implementation of Alternatives 2, 3, 4, 7, 8, and 9.

### Indirect Impacts

Under Alternatives 1 through 7, indirect impacts on sensitive wildlife species from air quality, light emissions, and noise would be less than significant. Under Alternatives 8 and 9, indirect impacts on sensitive wildlife species and habitat from construction noise would be less than significant. Alternatives 8 and 9 would have no indirect impacts on sensitive wildlife species from air quality, light emissions, or aircraft noise.

### Coastal Resources

In order to accommodate the relocation of runways and/or runway landing thresholds, changes to navigational aids currently located within the coastal zone would be required under several of the alternatives. The reconfiguration of navigational aids would affect state-designated sensitive habitat within the Los Angeles/El Segundo Dunes, including occupied habitat of the El Segundo blue butterfly, as well as sensitive plant and wildlife species. Alternatives 1, 3, 5, and 6 would result in greater disturbance in the coastal zone than would Alternatives 2, 4, and 7, as the former alternatives would require changes to navigational aids associated with both Runways 6L/24R and 6R/24L, whereas the latter alternatives would only require changes to Runway 6R/24L navigational aids. Alternatives 1 through 7 would also result in indirect impacts due to construction activity near the coastal zone. Under all of these alternatives, the impact on coastal zone resources would be less than significant with implementation of mitigation measures described in Section 4.3, *Biological Resources*: LAX Master Plan Mitigation Measures MM-BC-1, Conservation of State-Designated Sensitive Habitat Within and Adjacent to the El Segundo Blue Butterfly Habitat Restoration Area, MM-ET-3, El Segundo Blue Butterfly Conservation: Dust Control, and MM-ET-4, El Segundo Blue Butterfly Conservation: Habitat Restoration; and SPAS Mitigation Measures MM-BIO (SPAS)-1, Replacement of State-Designated Habitats, MM-BIO (SPAS)-2, Conservation of Floral Resources: South Coast Branching Phacelia, MM-BIO (SPAS)-3, Conservation of Floral Resources: Lewis' Evening Primrose, MM-BIO (SPAS)-4, Conservation of Floral Resources: California Spineflower, MM-BIO (SPAS)-5, Conservation of Floral Resources: Mesa Horkelia, MM-BIO (SPAS)-6, Conservation of Floral Resources: Orcutt's Pincushion, MM-BIO (SPAS)-8, Conservation of Faunal Resources: Sensitive Reptiles and Arthropods, MM-BIO (SPAS)-9, Conservation of Faunal Resources: Loggerhead Shrike, and MM-BIO (SPAS)-10, Conservation of Faunal Resources: Burrowing Owl. Alternatives 8 and 9 would have no impacts to coastal resources.

Regarding cumulative impacts, the most proximate cumulative project is the Coastal Dunes Improvement Project, located in the northernmost portion of the Los Angeles/El Segundo Dunes, west of Pershing Drive. The Coastal Dunes Improvement Project consists of the restoration and improvement of coastal dune habitat through the removal of streetscape, retaining walls, sidewalks, light poles, and other abandoned structures; the removal of select invasive non-native plant species; the installation of native plant species in disturbed areas; the recontouring of, and installation of erosion control measures on, newly exposed sites; and the restoration of periphery curb and gutter to minimize direct discharges from runoff. There is no potential for the impacts of the Coastal Dunes Improvement Project, which would result in beneficial impacts to coastal resources, to combine with impacts to coastal resources resulting from Alternatives 1 through 7. Therefore, no significant cumulative impacts to coastal resources would occur.

### Cultural Resources

#### Historical Resources

Impacts of the SPAS alternatives on recorded historical resources are summarized in **Table 1-9** and in the text below. All potentially significant impacts on historical resources associated with Alternatives 1, 2, 3, 5, 6, 7, 8, and 9 would be less than significant with implementation of mitigation measures, as discussed in Section 4.5, *Cultural Resources*. Alternative 4 would have no impact on historical resources.

# 1. Introduction and Executive Summary

Table 1-9

Summary of Impacts to Listed/Eligible Historical Resources After Mitigation

	Alt. 1		Alt. 2		Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
	Airfield/ Terminal	Ground Access	Airfield/ Terminal	Ground Access							
Hangar One	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Theme Building and Setting	LS	NI	LS	NI	SM	NI	LS	LS	LS	NI	SM
World War II Munitions Storage Bunker	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Intermediate Terminal Complex	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Union Savings and Loan Building	NI	LS	NI	LS	SM	NI	NI	NI	NI	LS	LS

Notes:

- NI = No Impact
- LS = Less Than Significant Impact
- SM = Significant Impact (but mitigable to Less Than Significant)

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

Source: CDM Smith, 2012.

No direct impacts to any historical resources would result from Alternatives 1, 2, 4, 5, 6, 7, or 8. Indirect impacts to historical resources associated with proposed concourse and terminal improvements under Alternatives 1, 2, 5, 6, and 7 would be less than significant due to their height limitations, design, and distance from the Theme Building and Setting and the intervening development. Similarly, indirect impacts to the Union Savings and Loan Building under Alternatives 1, 2, 8, and 9 would be less than significant due to the distance of the improvements to this resource. Impacts to historical resources under Alternatives 1, 2, and 5 through 9 would be further reduced with implementation of LAX Master Plan Commitment HR-1, Preservation of Historic Resources.

The impacts to historical resources under Alternative 3 are greater than those that would occur under any of the other alternatives because Alternative 3 would require considerable changes to the surroundings of the Theme Building to accommodate construction of a linear concourse, new terminals in place of the existing parking garages, and the APM. The proposed demolition of the concourses at Terminal 1, Terminal 2, and Terminal 3 and the construction of the new facilities such as the linear concourse and the passenger processing terminals near or around the Theme Building and the proposed APM would have indirect long-term visual impacts on the Theme Building and Setting. Therefore, the impacts on the Theme Building and Setting under Alternative 3 would be significant. While the LAX Master Plan supports preservation of historical/architectural resources, indirect impacts on the Theme Building and Setting would be significant due to the close proximity and large scale of the improvements as well as the fact that support for preservation of identified significant historic/architectural resources required by LAX Master Plan Commitment HR-1, Preservation of Historic Resources, does not specifically require their preservation. Mitigation Measures MM-HA (SPAS)-1, Preservation of Historic Resources: Theme Building and Setting (Alternative 3), described in Section 4.5, *Cultural Resources*, specifically protects the Theme Building and Setting and would reduce impacts to a level that is less than significant.

In addition, under Alternative 3, the Union Savings and Loan Building, an eligible historical resource, may be demolished. Since the building now meets the definition of a historical resource under State CEQA

Guidelines Section 15064.5(a)(3), construction of the APM would require demolition of the building or unavoidable indirect effects that would constitute significant impacts. However, with incorporation of Mitigation Measure MM-HA (SPAS)-3, Preservation of Historic Resources: Union Savings and Loan Building, described in Section 4.5, *Cultural Resources*, no historical resources would be adversely affected under this alternative because the APM alignment would be adjusted to avoid the building, and the location and design of the APM would be compatible with the historic building.

Under Alternative 9, impacts to historical resources would be less than Alternative 3 but greater than the other alternatives. Impacts resulting from the proposed design and/or construction of the APM within the CTA between the existing roadway structure and the National Register-eligible Theme Building would be similar to Alternative 3, and would be significant. The construction of the APM between World Way and the Theme Building would have potential long-term visual impacts by interrupting views of the north and south elevations of the Theme Building within the CTA from the north and south. With incorporation of Mitigation Measure MM-HA (SPAS)-2, Preservation of Historic Resources: Theme Building and Setting (Alternative 9), described in Section 4.5, *Cultural Resources*, potentially significant impacts to the Theme Building and Setting would be avoided because views of the north and south elevations of the Theme Building would not be impaired by the APM.

Regarding cumulative impacts, with the exception of the Airport Metro Connector Project, the cumulative projects in the CTA would be compatible with the historic materials, features, size, scale and proportion, and massing of the Theme Building and Setting and would protect the integrity of the historical resource and its environment. Although implementation of the Airport Connector Project may contribute to a cumulatively significant impact on the Theme Building and Setting depending on the alternative selected, with height limitations, design, and distance of the proposed improvements under Alternatives 1, 2, 5, 6, and 7, and the incorporation of LAX Master Plan Commitment HR-1, Preservation of Historic Resources, the contribution of Alternatives 1, 2, 5, 6, and 7 would not be cumulatively considerable. In light of proposed Mitigation Measure MM-HA (SPAS)-1, Preservation of Historic Resources: Theme Building and Setting (Alternative 3), and Mitigation Measure MM-HA (SPAS)-2, Preservation of Historic Resources: Theme Building and Setting (Alternative 9), the contribution of Alternatives 3 and 9 to cumulative impacts on the Theme Building and Setting would not be cumulatively considerable. Alternatives 4 and 8 do not include any improvements within the CTA and thus there would be no cumulative impact on the Theme Building and Setting.

### Archaeological Resources

Impacts of the SPAS alternatives on recorded archaeological resources are summarized in **Table 1-10** and in the text below. All potentially significant impacts on archaeological resources associated with all of the SPAS alternatives would be less than significant with implementation of mitigation measures, as discussed in Section 4.5, *Cultural Resources*.

# 1. Introduction and Executive Summary

Table 1-10

Summary of Impacts to Recorded Archaeological Resources

	Alt. 1		Alt. 2		Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
	Airfield/ Terminal	Ground Access	Airfield/ Terminal	Ground Access							
CA-LAN-202	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
CA-LAN-214	NI	NI	NI	NI	LS	LS	NI	NI	NI	NI	NI
CA-LAN-692	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
CA-LAN-1118	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS	LS
CA-LAN-2345	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
CA-LAN-2385H	LS	NI	NI	NI	LS	NI	LS	LS	NI	NI	NI
P-19-100115	LS	NI	NI	NI	LS	NI	LS	LS	NI	NI	NI
P-19-100116	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Notes:

NI = No Impact

LS = Less Than Significant Impact

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

Source: CDM Smith, 2012.

One potentially eligible site (CA-LAN-2345) would not be affected by any of the SPAS alternatives because it is located far enough away from the alternatives to not be impacted. Under Alternatives 1, 3, 5, and 6, impacts to CA-LAN-2385H and P-19-100115 associated with improvements to the north airfield would be less than significant because these sites are not historical resources or unique archaeological resources under the State CEQA Guidelines and have been determined ineligible for listing at the federal, state, and local level.

Under all of the alternatives, impacts to CA-LAN-118 associated with the use of Construction Staging Area A would be less than significant because this resource is not an historical resource or unique archaeological resource under the State CEQA Guidelines and has been determined ineligible for listing at the federal, state, and local levels.

Impacts to CA-LAN-214 associated with Alternatives 3 and 4 would be less than significant because this resource is not an historical resource or unique archaeological resource under the State CEQA Guidelines and has been determined ineligible for listing at the federal, state, and local levels.

No other previously recorded archaeological resources have been identified in the improvement areas associated with any of the alternatives. Despite the lack of recorded archaeological resources, these alternatives have the potential to impact unidentified archaeological resources during construction excavations. This would be a significant impact. Mitigation Measure MM-HA (SPAS)-4, Conformance with LAX Master Plan Archaeological Treatment Plan (ATP), described in Section 4.5, *Cultural Resources*, would reduce this impact to a level that is less than significant.

The LAX Master Plan Mitigation Monitoring and Reporting Program ATP provides for evaluation and treatment of archaeological resources consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation and other applicable guidance. Requirements outlined in

the ATP include specific procedures for archaeological monitoring, identifying and assessing the significance of resources, and for the recovery and curation of resources when warranted. For example, an archaeological excavation program to remove the resources may be implemented, if deemed necessary. In addition, the ATP includes guidance on retaining a Native American monitor if Native American cultural resources are encountered. If human remains are found, LAWA will need to comply with the State Health and Safety Code regarding the appropriate treatment of those remains as outlined in the ATP. Finally, the ATP details the reporting requirements to document the archaeological monitoring effort and provides guidance as to the proper curation and archiving of artifacts in accordance with industry and federal standards. The procedures outlined in the ATP would reduce significant impacts to previously unidentified archaeological resources associated with the SPAS alternatives to a less than significant level.

Regarding cumulative impacts, impacts associated with the disturbance or destruction of undiscovered archaeological resources during construction of any of the SPAS alternatives would be less than significant with implementation of Mitigation Measure MM-HA (SPAS)-4, Conformance with LAX Master Plan Archaeological Treatment Plan. However, the potential for cumulative projects to disturb or destroy undiscovered resources would be cumulatively significant when viewed in combination with the progressive cumulative loss of archaeological resources associated with other past, present, and reasonably anticipated future projects. Even though regulatory controls and project-level mitigation measures would reduce these effects, there would be a cumulatively significant impact to undiscovered archaeological resources associated with cumulative projects. With the exception of the navigational aids in the Los Angeles/El Segundo Dunes, the improvements associated with the SPAS alternatives are located in disturbed areas. The navigational aids would not require deep excavations. Therefore, the likelihood of encountering undiscovered significant archaeological resources during construction would be limited. Moreover, construction activities would be subject to Mitigation Measure MM-HA (SPAS)-4, Conformance with LAX Master Plan Archaeological Treatment Plan. For these reasons, the contribution of the SPAS alternatives to cumulative impacts would not be cumulatively considerable.

### **Greenhouse Gases**

Construction and operation of all of the SPAS alternatives would result in a significant impact relative to greenhouse gas (GHG) emissions, primarily related to construction activities, aircraft operations, ground support equipment (GSE), and motor vehicle operations, when compared to baseline conditions. Of the nine SPAS alternatives, the per capita GHG emissions would be highest under Alternative 1, or Alternative 5 depending on which ground access improvements this alternative is paired with, and lowest under Alternative 9. Continued implementation of LAWA's existing practices and programs that promote sustainability and reduction in GHG emissions, along with compliance with the City of Los Angeles Green Building Ordinance, would help reduce GHG emissions associated with all of the SPAS alternatives; however, the GHG emissions associated with Alternatives 1 through 9 would remain significant and unavoidable.

Cumulative development in the region, and at LAX specifically, would also result in increased GHG emissions as a result of construction and operational activity. All of the SPAS alternatives would result in lower GHG emissions from aircraft operations, which is the primary source of GHG emission increases compared to baseline conditions, than would otherwise occur in 2025 without the project. Any of the SPAS alternatives would comply with requirements of the City of Los Angeles Green Building Code, which includes a number of measures that serve to reduce GHG emissions. On a per capita (per passenger) basis, implementation of the SPAS alternatives would result in between approximately 13.1 and 15.6 percent less GHG emissions than the per capita GHG emissions associated with baseline conditions, depending on the alternative. The California Assembly Bill 32 Scoping Plan indicates that at least a 16 percent reduction in GHG emissions is necessary to achieve the goal of reducing GHG emissions projected to occur in California by 2020 under "business as usual" down to levels that occurred in the state in 1990. Meeting this GHG reduction goal statewide is intended to address cumulative GHG emissions within the state. Given that the SPAS alternatives cannot achieve a 16 percent reduction in GHG emissions, on a per capita basis compared to baseline conditions, the resultant significant GHG emissions impact would be cumulatively considerable.

# 1. Introduction and Executive Summary

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## Human Health Risk Assessment

The Human Health Risk Assessment (HHRA) addresses possible incremental health impacts associated with the SPAS alternatives. Possible human health risks associated with the SPAS alternatives were estimated using modeled toxic air contaminants (TAC) concentrations in air and standard methods developed by California Environmental Protection Agency (CalEPA) and U.S. Environmental Protection Agency (USEPA), understanding that there are uncertainties present in all facets of human health risk assessment (Appendix G1 of this EIR describes such uncertainties). The evaluation of impacts associated with cancer risks and chronic non-cancer health hazards included combined impacts from construction and operations. The evaluation of impacts associated with acute non-cancer health hazards only included impacts from operations. **Table 1-11** and the text below summarize the conclusions, based on modeling estimates, regarding significant human health impacts, all of which are based on comparisons to baseline (2009) conditions.

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**Table 1-11**

**Summary of Human Health Risk Impacts After Mitigation**

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	<u>Alt. 1</u>	<u>Alt. 2</u>	<u>Alt. 3</u>	<u>Alt. 4</u>	<u>Alt. 5</u>	<u>Alt. 6</u>	<u>Alt. 7</u>	<u>Alt. 8</u>	<u>Alt. 9</u>
Cancer Risks	LS								
Chronic Non-Cancer Health Hazards	LS								
Acute Non-Cancer Health Hazards	SU								
Health Effects for On-Airport Workers	LS								

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Notes:

LS = Less than Significant Impact

SU = Significant Unavoidable Impact

Mitigation measures are LAX Master Plan Mitigation Measures MM-AQ-1, MM-AQ-2, MM-AQ-3, MM-AQ-4, and components from Section X, Air Quality, of the LAX Master Plan Community Benefits Agreement.

Source: CDM Smith, 2012.

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- ◆ SPAS-related incremental cancer risks with implementation of the SPAS alternatives are anticipated to be below the threshold of significance of 10 in one million for all receptor types (i.e., child resident, school child, adult resident, and adult worker) within the study area. Incremental cancer risk estimates indicate that impacts would be less than significant for all alternatives.
- ◆ SPAS-related incremental cancer risks after implementation of the SPAS alternatives are projected to be less than risks associated with 2009 baseline conditions for all receptors, except for adult workers under Alternative 3, indicating a beneficial impact. SPAS-related incremental cancer risks after implementation of Alternative 3 would be less than significant impact.
- ◆ SPAS-related incremental chronic non-cancer hazard indices with implementation of the SPAS alternatives are anticipated to be below the threshold of significance for all receptor types (i.e., child resident, school child, adult resident, and adult worker). Incremental cancer risk estimates indicate that impacts would be less than significant for all alternatives.
- ◆ Some SPAS-related incremental acute non-cancer hazard indices would be at or slightly above the threshold of significance of 1 at locations of modeled peak toxic air contaminants (TAC) concentrations for all SPAS alternatives. At this time, select, quantifiable and feasible mitigation measures from the LAX Master Plan MMRP were assumed for the SPAS HHRA and acute non-cancer health hazard impacts are considered to be significant and unavoidable for small areas at or near the LAX fence-line. It should be noted that the primary TAC of concern contributing to this impact is acrolein from aircraft operations, which, when measured against 2009 baseline conditions, would result in a significant impact for all alternatives at buildout in 2025. Acute exposures to acrolein

may result in mild irritation of eyes and mucous membranes. The increased acrolein emissions are attributable mostly to the increase in passenger activity levels and associated aircraft operations anticipated to occur between 2009 and 2025 for all alternatives. This increase in passenger activity levels is anticipated to occur irrespective of the SPAS alternatives (i.e., projected growth in passenger activity at LAX). In comparing impacts between the SPAS alternatives in 2025, which better characterizes the differences attributable to the airfield improvements specific to each alternative and "nets-out" the 2009 to 2025 activity growth impact common to all alternatives, it is evident that the airfield improvements proposed under most of the alternatives would result in lower acute non-cancer health hazard impacts than would otherwise occur if no airfield improvements were implemented. Specifically, the overall off-airport, acute non-cancer health hazard impacts associated with Alternatives 1, 2, 5, 6, and 7 (i.e., alternatives that propose specific airfield improvements) are less than those of Alternative 4 (i.e., the alternative that does not propose any airfield improvements other than those necessary to meet Runway Safety Area requirements). The one notable exception is Alternative 3, which does propose airfield improvements, but the design of those improvements results in a greater amount of aircraft taxiing time (i.e., longer periods of aircraft engine emissions) than would otherwise occur if no airfield improvements were made.

- ◆ Significant acute non-cancer health hazard impacts where hazard quotients are equal to or greater than 2 would affect a small area primarily north of the west end of Runway 6L/24R for all SPAS alternatives. For Alternative 3, areas affected include: north of the west end of Runway 6L/24R, east of Runway 7L/24L in the south airfield, and near the east end of Runway 6L/24R in the north airfield. For Alternative 4, an additional small area south of Runway 7R/25L near Sepulveda Boulevard would be affected. Although the hazard quotients are above the threshold of 1, acute non-cancer health hazard impacts are expected to be minor because of the uncertainty factor of the acute Reference Exposure Levels (REL) and because the acute REL represents the tail-end of a distribution and not a specific "bright line" beyond which adverse effects are certain; instead the onset of potentially induced symptoms is probabilistic. Similar to above, it is important to note that, while all of the alternatives would result in significant acute non-cancer health hazard impacts where hazard quotients are greater than 1, based on a comparison to 2009 baseline conditions, a comparison of impacts between all of the alternatives in 2025 indicates that impacts would be less for those alternatives that propose airfield improvements than would otherwise occur if no airfield improvements were made, with the exception of Alternative 3. It should also be noted that the significant acute impacts would occur at a small number of locations at the LAX fence-line. It is expected that actual impacts in the community would be below levels of significance.
- ◆ Estimated maximum air concentrations for all TAC at the evaluated on-airport location at the LAX Theme Building would not exceed California Occupational Safety and Health Administration (CalOSHA) 8-hour Time-Weighted Average Permissible Exposure Levels (PEL-TWAs) for workers under all SPAS alternatives. Therefore, health impacts to on-airport workers would be less than significant.

LAX Master Plan mitigation measures would reduce TAC emissions associated with all of the SPAS alternatives. However, even with implementation of these measures, acute non-cancer health hazards at some fence-line receptors would exceed the threshold of significance under all of the alternatives, compared to 2009 baseline conditions. As such, acute non-cancer health hazard impacts under all of the SPAS alternatives are considered to be significant and unavoidable.

Regarding cumulative impacts, although no defined thresholds for cumulative health risk impacts are available, it is the policy of the South Coast Air Quality Management District (SCAQMD) to use the same significance thresholds for cumulative impacts as for the project-specific impacts analyzed in the EIR. If cumulative health risks are evaluated following this SCAQMD policy, the project's contribution to the cumulative cancer risk would not be cumulatively considerable since the incremental cancer risk impacts of the SPAS alternatives are all negative (i.e., beneficial) and thus below the individual cancer risk significance thresholds of 10 in one million. However, the SCAQMD policy does have different significance thresholds for project-specific and cumulative impacts for hazard indices for TAC emissions. A project-specific significance threshold is one (1.0) while the cumulative threshold is 3.0. Based on this

## 1. Introduction and Executive Summary

SCAQMD policy, the relatively small chronic non-cancer hazard indices associated with airport emissions under the SPAS alternatives would not be cumulatively considerable. However, acute non-cancer hazard indices would be greater than the cumulative threshold of 3.0 for Alternatives 1, 3, 4, 8, and 9, and, therefore, would be cumulatively considerable under those alternatives.

### Safety

Currently, no active solid waste landfills are located within a five-mile radius of LAX. Therefore, none of the alternatives would relocate a runway to within 10,000 feet of a solid waste landfill. Under all of the alternatives, no new facilities would be constructed or operational conditions implemented that would serve as attractants to birds. In accordance with FAA requirements, the airfield would continue to be maintained to avoid the ponding of water, the growth of vegetation, and the development of other conditions that may serve as attractants to nuisance wildlife, including birds. Therefore, impacts under all of the alternatives with respect to birdstrikes would be less than significant.

Implementation of Alternatives 1, 2, 3, 4, 5, 6, and 7 would enhance the safety and efficiency of aircraft operating in the north airfield, compared to baseline conditions (2010). Alternatives 8 and 9 focus on ground access improvements and would not affect the safety and efficiency of aircraft operating in the north airfield.

**Table 1-12** provides a summary of the safety and efficiency enhancements to the north airfield operations that would occur with implementation of airfield improvements under Alternatives 1, 2, 3, 4, 5, 6, and 7.

**Table 1-12**

#### Summary of Safety and Efficiency Enhancements to the North Airfield Operations

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Achieves full compliance with RSA requirements	X	X	X	X	X	X	X
Shifts the arrival RPZ for Runway 24R westward, resulting in residences and the vehicle staging area west of Sepulveda Boulevard no longer being located within the RPZ	X				X	X	
Provides greater amount of runway and taxiway facilities that meet FAA Airport Design Standards for ADG V and VI aircraft, particularly as it relates to separation requirements	X	X	X <sup>1</sup>		X <sup>1</sup>	X	X <sup>1</sup>
Reduces the need for special operations restrictions, modifications of standards, and waivers from FAA	X	X	X		X	X	X
Provides increased separation between runways and between runways and taxiways, which better enables taxiing and holding aircraft to stay clear of runway OFZ and RSA surfaces	X		X		X	X	X
Allows addition of a centerfield parallel taxiway that includes high-speed exits from Runway 6L/24R, which provides more time and options for FAA air traffic controllers to handle aircraft exiting the runway; more time and distance for the pilot of an arriving aircraft to exit the runway, slow down and hold before crossing Runway 6R/24L; and reduced potential for safety hazards/incursions	X		X		X	X	X
Improves the locations and design of crossing points (i.e., 90-degree crossing angle) at Runway 6R/24L, which provides better pilot visibility down Runway 6R/24L before crossing	X		X		X	X <sup>2</sup>	X <sup>2</sup>
Realigns/straightens Taxilane D to provide a full-length parallel taxiway designed for ADG V aircraft	X	X				X	X

Table 1-12

Summary of Safety and Efficiency Enhancements to the North Airfield Operations

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Realigns/straightens Taxilane D to provide a full-length parallel taxiway designed for ADG VI aircraft			X		X		
Relocates vehicle service road adjacent to Taxiway E and Taxilane D out from between two active surfaces	X	X			X	X	X
Provides more aircraft holding areas near the end of runways, thereby improving the ability for sequencing departures	X	X	X		X	X	X
Improves the locations for high-speed exits from Runway 6L/24R and improves crossing angles at Runway 6R/24L with better pilot visibility down Runway 6R/24L before crossing	X	X	X		X	X	X

Notes:

RSA = Runway Safety Area  
 RPZ = Runway Protection Zone  
 ADG = Aircraft Design Group  
 OFZ = Obstacle Free Zone

<sup>1</sup> Improves to a greater degree than Alternatives 1, 2, and 6.  
<sup>2</sup> Improves to a more limited degree than Alternatives 1, 3, and 5.

Source: CDM Smith, 2012.

The northward relocation of Runway 6L/24R under Alternatives 1, 5, and 6 would move the RPZ northward, resulting in additional businesses in Westchester being located within the RPZ, and the 604-foot westward shift in the displaced landing threshold for Runway 24R would move the RPZ westward such that the RPZ would no longer encompass any residences. The southward relocation of Runway 6R/24L under Alternative 3 would move the RPZ southward, resulting in additional developed parcels being located within the RPZ. The impacts associated with the change of uses within RPZ areas, compared to baseline conditions, would be less than significant. In summary, as discussed in Section 4.7.2, *Safety*, none of the SPAS alternatives would compromise aviation safety or result in an aviation safety hazard for people in the project area.

Regarding cumulative impacts, none of the ongoing and reasonably foreseeable on-airport improvements identified in Chapter 5, *Cumulative Impacts*, would increase the potential for aviation incidents or accidents. Future development within LAX Northside would place new structures north of the north airfield complex. The relocation of Runway 6L/24R to the north under Alternatives 1, 5, and 6 and the westerly shift of the displaced landing threshold for Runway 24L would shift the associated FAR Part 77 Airspace Surfaces accordingly, drawing them closer to LAX Northside. Depending on the location, design, height, and timing of future development in LAX Northside, there would be a potential cumulative impact on aviation safety due to structures penetrating the Part 77 Airspace Surfaces (i.e., the potential for future development to penetrate existing Part 77 surfaces and, in combination with the shifting of the surfaces, increase the amount of penetration). FAR Part 77 imaginary surfaces are primarily intended to serve as a means of identifying objects that require more detailed analyses specific to the types of airspace operations and related safety requirements that occur within those surfaces. A determination of whether such penetrations of a Part 77 surface pose an aviation safety hazard, and the identification of the appropriate measure(s) to address any such hazard, occur through the more detailed analysis, which is completed by, or in coordination with, the FAA. Options to address potential aviation safety hazards can range from doing nothing (i.e., for low-risk objects), to placing high-visibility markings and lighting on structures to make them highly visible to pilots and indicating such objects on avigation maps, to

## **1. Introduction and Executive Summary**

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identifying the need for proposed structures to be lower in height or removed. The combination of moving a runway and associated safety surfaces, and developing new uses directly north of the airport, would normally be a significant cumulative impact, and the contribution of Alternatives 1, 5, or 6 to this impact would be cumulatively considerable. However, both the northward relocation of Runway 6L/24R and the future development within LAX Northside are directly controlled by LAWA and are subject to FAA approval. As such, both LAWA and the FAA will plan, evaluate, and closely regulate future development within LAX Northside to address potential safety concerns, understanding that the safe and efficient operation of aircraft is the first priority. Such review, coordination, and requirement of FAA approval relative to the runway relocation would automatically occur through the airport layout plan amendment process. While it is anticipated that such Part 77 review and approval by FAA relative to development in LAX Northside would occur through the normal course of ongoing coordination between LAWA and the FAA, Mitigation Measure MM-SAF (SPAS)-1, FAR Part 77 Review, presented in Section 5.5.7.2.10 of Chapter 5, *Cumulative Impacts*, is recommended to provide additional certainty that potential aviation safety hazards are addressed through the Part 77 review process for LAX Northside development. There would be no cumulative impact to aviation safety under Alternatives 2, 3, 4, 7, 8, or 9.

### **Hazardous Materials**

Under all of the SPAS alternatives, an increase in hazardous materials use and hazardous waste generation during routine fueling and maintenance of aircraft, buses, and vehicles, as well as during construction, would increase the chances of a spill or release of substances that could result in contamination of soil or groundwater. Compliance with the *Procedure for the Management of Contaminated Materials Encountered During Construction*, which was prepared in accordance with LAX Master Plan Commitment HM-2, Handling of Contaminated Materials During Construction, would ensure that spills and releases would not create a hazard to the public or the environment, and would not result in contamination of soil or groundwater. Therefore, impacts under all of the SPAS alternatives would be less than significant.

Proposed improvements associated with all of the SPAS alternatives would require excavation in areas of known contamination. Alternative 3 would have the potential to affect ongoing remediation at the greatest number of sites, whereas Alternative 4 would affect the fewest. However, implementation of LAX Master Plan Commitment HM-1, Ensure Continued Implementation of Existing Remediation Efforts, impacts associated with interference with remediation efforts under all of the SPAS alternatives would be less than significant.

Impacts to construction workers from exposure to known and previously unidentified soil and/or groundwater contamination could be encountered during construction of any of the alternatives. With implementation of measures required by existing laws and regulations, particularly Occupational Safety and Health Administration (OSHA) and CalOSHA standards, as well as compliance with the *Procedure for the Management of Contaminated Materials Encountered During Construction*, this impact would be less than significant for all of the SPAS alternatives.

Implementation of Alternatives 1, 2, 3, 4, 8, and 9 would alter ground access to, from, and around LAX. A lack of adequate access could impair the effective implementation of emergency response activities by impeding the movement of emergency vehicles. During construction, local roadway and/or lane closures would occur for varying periods; however, roadway access would be maintained through detours and diversions. Since local access would be adequately maintained, and emergency access would be coordinated and ensured through LAX Master Plan Commitments C-1, ST-9, ST-12, ST-14, ST-17, ST-18, ST-19, ST-21, and ST-22, the implementation of emergency response activities would not be impaired, and impacts would be less than significant under Alternatives 1, 2, 3, 4, 8, and 9. As Alternatives 5 through 7 do not include proposed ground access improvements, there would be no impacts related to the impairment of the implementation of emergency response activities under these alternatives.

Cumulative impacts with respect to hazardous materials as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

**Hydrology/Water Quality**

A summary of the hydrology and water quality impacts associated with the SPAS alternatives is provided in **Table 1-13** and in the text below.

**Table 1-13**  
**Summary of Hydrology and Water Quality Impacts After Mitigation**

	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Hydrology</b>									
Flooding	SM	SM	LS	SM	SM	SM	SM	SM	SM
Erosion/Siltation	LS	LS	SM	LS	LS	SM	LS	LS	LS
<b>Water Quality</b>									
Storm Water Pollutant Loads	SM	SM	LS	SM	SM	SM	SM	SM	SM
Dry Weather Flows	LS	LS	LS	LS	LS	LS	LS	LS	LS
Construction Impacts	LS	LS	LS	LS	LS	LS	LS	LS	LS

Notes:

LS = Less Than Significant Impact

SM = Significant Impact (but mitigable to Less Than Significant)

Source: CDM Smith, 2012.

**Hydrology**

The total impervious area within the SPAS hydrology and water quality study area (HWQSA) compared to baseline conditions would increase under all of the SPAS alternatives. Within the HWQSA, Alternative 3 would have the largest increase in impervious area, followed by Alternatives 5 and 1. Alternative 4 would have the smallest increase. Within the Santa Monica Bay Watershed, Alternative 5, followed by Alternative 1, would have the largest increase in impervious area, due to the modifications to the north airfield and the structural modification (conversion into a concrete box culvert) of the entire Argo Drainage Channel. Within the Dominguez Channel Watershed, Alternative 3 would have the largest increase in impervious area, as this alternative includes the most extensive ground access improvements. Since much of the area surrounding the airport in both the Santa Monica Bay and Dominguez Channel watersheds is developed (i.e., impervious) under baseline conditions, changes associated with the alternatives would represent a marginal increase in regional impervious area. However, the increases in impervious area and the associated increase in storm water peak flow rates could potentially exceed the capacity of the storm water facilities in area sub-basins, which would result in flooding in any location where capacity was exceeded.

The LAX Conceptual Drainage Plan was developed to identify measures to mitigate flooding impacts associated with the approved LAX Master Plan. As a result, under Alternative 3, with completion of these storm drain system improvements, impacts associated with flooding would be less than significant. However, under Alternatives 1, 2, and 4 through 9, the LAX Conceptual Drainage Plan improvements may not fully mitigate flooding impacts, as these improvements were not specifically designed for these alternatives. This would be a significant impact. As described in Section 4.8, *Hydrology/Water Quality*, a new mitigation measure, MM-HWQ (SPAS)-1, Conceptual Drainage Plan Revision and Update, is

## **1. Introduction and Executive Summary**

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proposed to tailor the LAX Conceptual Drainage Plan recommendations to the specific characteristics of the selected SPAS alternative. This measure would reduce flooding impacts associated with Alternatives 1, 2, and 4 through 9 to a level that is less than significant.

Under all alternatives, most facilities receiving and conveying storm water from the airport would be below ground pipes or concrete lined and, therefore, any increases in storm water peak flow rates or changes in the drainage infrastructure would not result in substantial erosion or siltation either on-site or off-site in for these drainage systems. The only exception is the Argo Drainage Channel, which is currently unlined. The first 750 linear feet of the easterly end of the channel would be lined under all alternatives and, therefore, not subject to erosion or sedimentation in the future. Also, under Alternatives 1 and 5, the entire channel would be structurally covered to support aircraft and, therefore, not subject to erosion or siltation. Under Alternatives 2, 4, and 7, only the easterly end of the channel (750 linear feet) would be lined; however, there would be no increase in the peak flow rates through the Argo Drainage Channel under these alternatives and, therefore, no increase in the potential for erosion or sedimentation. Under Alternatives 3 and 6 portions of the Argo Drainage Channel would remain unlined and there would be an increase in peak flows to the channel, resulting in the potential for erosion and sedimentation. As described in Section 4.8, *Hydrology/Water Quality*, a new mitigation measure, MM-HWQ (SPAS)-1, Conceptual Drainage Plan Revision and Update, is proposed to tailor the LAX Conceptual Drainage Plan recommendations to the specific characteristics of the selected SPAS alternative. This measure would reduce erosion and sedimentation impacts associated with Alternatives 3 and 6 to a level that is less than significant. Therefore, the impact of erosion or siltation due to runoff from the airport would be less than significant for all drainage facilities under all alternatives.

As described in Section 5.5.8 of Chapter 5, *Cumulative Impacts*, with the implementation of mitigation, the contribution of Alternatives 1, 2, 4, 5, 6, 7, 8, and 9 to significant cumulative hydrology impacts would not be cumulatively considerable.

### **Water Quality**

#### **Storm Water Pollutant Loads**

Under all of the alternatives, the estimated annual total pollutant load generated within the HWQSA would increase for the majority of constituents compared to baseline conditions (see **Table 1-13**). The LAX Conceptual Drainage Plan was developed to identify Best Management Practices (BMPs) to mitigate increases in pollutant loads associated with the approved LAX Master Plan. As a result, under Alternative 3, with implementation of these and other measures, including Standard Urban Stormwater Mitigation Plan (SUSMP) and Low Impact Development (LID) requirements, water quality impacts would be less than significant. However, under Alternatives 1, 2, and 4 through 9, these measures may not fully mitigate increases in pollutant loads, as these improvements were not specifically designed for these alternatives. This would be a significant impact. As described in Section 4.8, *Hydrology/Water Quality*, a new mitigation measure, MM-HWQ (SPAS)-1, Conceptual Drainage Plan Revision and Update, is proposed to tailor the LAX Conceptual Drainage Plan recommendations to the specific characteristics of the selected SPAS alternative. This measure would reduce water quality impacts associated with Alternatives 1, 2, and 4 through 9 to a level that is less than significant.

#### **Dry Weather Flows**

Sources of dry weather flows within the HWQSA are associated with activities that include outdoor maintenance of vehicles; building and grounds maintenance; aircraft and ground vehicle fueling, painting, stripping, and washing; limited de-icing; and chemical and fuel transport and storage. While implementation of the SPAS alternatives would not in themselves result in an intensification of such airport-related activities, the projected growth in airport activity projected to occur by 2025 (i.e., growth from 56.5 MAP in 2009 to 78.9 MAP in 2025 under all alternatives) would increase such activities. These activities could result in an increased potential for spills and leaks that could, in turn, result in an increase in pollutant loads to receiving water bodies; however, compliance with existing regulations and airport procedures, particularly the LAX Storm Water Pollution Prevention Plan (SWPPP), would reduce the likelihood of dry weather discharges and the impacts associated with hazardous materials spills. With

## 1. Introduction and Executive Summary

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such continued compliance, the pollutant load generated from dry weather flows would not be expected to increase under any of the alternatives and the associated impact would be less than significant.

### **Construction Impacts**

Under all of the SPAS alternatives, construction of the improvements would affect an area greater than one acre, thus requiring LAWA to develop project-specific construction SWPPPs in compliance with the state's construction permit. To minimize the effect that the construction activities would have on water quality, the SWPPPs would specify temporary construction BMPs. By following the procedures outlined in the SWPPPs and employing temporary construction BMPs, impacts to water quality associated with construction activities under all of the alternatives would be less than significant.

### **Cumulative Impacts**

As described in Section 5.5.8 in Chapter 5, *Cumulative Impacts*, with the implementation of mitigation, the contribution of Alternatives 1, 2, 4, 5, 6, 7, 8, and 9 to significant cumulative water quality impacts would not be cumulatively considerable.

### **Land Use and Planning**

A summary of land use and planning impacts related to plan consistency and aircraft noise exposure associated with the SPAS alternatives is summarized in **Tables 1-14** and **1-15** and described in the text below.

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**Table 1-14**

**Summary of Land Use and Planning Impacts**

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Impact Category	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Plan Consistency</b>									
On-Airport Land Use Plans	LS	LS	LS	LS	LS	LS	LS	LS	LS
Off-Airport Land Use Plans	LS	LS	LS	LS	LS	LS	LS	LS	LS
Acquisition and Relocation	LS	LS	LS	LS	NI	NI	NI	LS	LS

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Notes:

NI = No Impact

LS = Less Than Significant Impact

Source: PCR Services Corporation, 2012.

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# 1. Introduction and Executive Summary

Table 1-15

Summary of Land Use and Noise Impacts

Impact Category	Alternative								
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Aircraft Noise Exposure</b>									
65 CNEL	SM	SM	SM	SM	SM	SM	SM	NA	NA
1.5 CNEL increase above 65 CNEL	SM	SM	SM	SM	SM	SM	SM	NA	NA
75 CNEL	SU	SU	SU	SU	SU	SU	SU	NA	NA
Interim Prior to ANMP Implementation	SU	SU	SU	SU	SU	SU	SU	NA	NA

Notes:

SM = Significant Impact (but mitigable to Less Than Significant)

SU = Significant Unavoidable

NA = Not Applicable. The focus of Alternatives 8 and 9 is on potential options related to ground access improvements, which do not relate to aircraft noise. Aircraft noise exposure impacts associated with Alternative 8 or 9 would depend on which airfield improvements option (i.e., under Alternatives 1, 2, 5, 6, or 7) that it is paired with.

Source: PCR Services Corporation, 2012.

## Plan Consistency

No significant impacts due to a plan inconsistency or plan conflict with the applicable plans analyzed were identified for any of the SPAS alternatives. However, each of the alternatives would include plan amendments to either an off-airport or on-airport plan to ensure precise consistency with the applicable plan. Alternatives 1 and 4 would include amendments to the greatest number of plans, and Alternative 3 would include amendments to the fewest. All of the alternatives, with the exception of Alternative 3, would include amendments to the LAX Plan and LAX Specific Plan. All of the alternatives with ground access components (i.e., Alternatives 1 through 4, 8, and 9) would include amendments to the City of Los Angeles Transportation Element. Alternatives 1, 3, 4, 5, and 6 would also include amendments to the City of Los Angeles 2010 Bicycle Plan. Finally, all of the alternatives with airfield components, with the exception of Alternative 3, (i.e., Alternatives 1, 2, 4, 5, 6, and 7) would include amendments to the Los Angeles County Airport Land Use Plan (ALUP). With an amendment to the LAX Plan, LAX Specific Plan, City of Los Angeles Transportation Element, and City of Los Angeles 2010 Bicycle Plan to ensure precise consistency, impacts related to conflicts with plans and regulations would be less than significant.

All the areas proposed for acquisition under Alternatives 1, 2, 3, 4, 8, and 9 are located within the boundaries of the LAX Plan and LAX Specific Plan and are consistent with the underlying land use designations of these plans. No acquisition would occur under Alternatives 5, 6, and 7 as these alternatives only include airfield and terminal components. Because acquisition and removal of businesses would not require changes to existing General Plan or zoning designations, no General Plan or zoning inconsistencies would occur and impacts would be less than significant.

Cumulative impacts with respect to plan consistency as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

## Aircraft Noise Exposure

Alternatives 1 through 7 would each result in some residential uses and non-residential noise-sensitive facilities being newly exposed to noise levels of 65 Community Noise Equivalent Level (CNEL) or higher or increases of 1.5 CNEL or higher within the 65 CNEL or higher noise contours. In addition, some residential habitable exterior areas (such as patios) and some parks would be newly exposed to noise levels above 75 CNEL. These impacts would be significant. With implementation of LAX Master Plan

## 1. Introduction and Executive Summary

Mitigation Measure MM-LU-1, Implement Revised Aircraft Noise Mitigation Program, these impacts would be less than significant with the exception of interim impacts prior to the completion of noise insulation or land recycling, and impacts on residential uses with outdoor habitable areas, or parks that would be newly exposed to noise levels of 75 CNEL or higher. These residual impacts would be significant and unavoidable. Alternatives 8 and 9 focus on potential options relative to ground access improvements, which do not relate to aircraft noise exposure. The potential for aircraft noise exposure impacts to noise-sensitive uses associated with Alternative 8 or Alternative 9 would depend on which airfield improvements options it is paired with (i.e., airfield improvements associated with Alternatives 1, 2, 5, 6, or 7).

As presented in **Table 1-16**, Alternative 4 would result in the greatest number of residential units, population, and non-residential noise-sensitive facilities that would be newly exposed to 65 CNEL or higher noise levels. This alternative would also result in the greatest number of residential units and acres that would be newly exposed to the 75 CNEL. Alternative 5 would result in the least amount of residential units and population that would be newly exposed to the 65 CNEL, while Alternatives 5, 6, and 7 would result in the least non-residential noise-sensitive facilities that would be newly exposed to the 65 CNEL, compared to the other alternatives. Under Alternative 3, no residential units or acres would be newly exposed to the 75 CNEL. Under Alternatives 1 through 7 two parks would be newly exposed to the 75 CNEL, Imperial Avenue Parkway in El Segundo and Vista del Mar Park in the City of Los Angeles. As previously stated, Alternatives 8 and 9 do not pertain to aircraft noise exposure impacts.

**Table 1-16**

**Alternatives 1 through 7 Residential Uses and Non-Residential Noise-Sensitive Facilities  
Noise Exposure Effects  
(Compared to Baseline 2009 Conditions)**

Impact Category	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
<b>65 CNEL</b>							
Newly Exposed Residential Units	4,918	5,079	5,056	5,151	4,899	5,010	5,033
Newly Exposed Residential Population	13,445	14,326	13,443	14,691	13,259	13,892	14,176
Newly Exposed Noise-Sensitive Facilities	44	45	46	47	43	43	43
<b>1.5 CNEL Increase above 65 CNEL</b>							
Residential Units Exposed	5,296	6,797	5,884	6,020	5,408	4,879	7,325
Residential Population Exposed	13,608	18,035	15,099	16,661	13,773	12,705	19,482
Noise-Sensitive Facilities Exposed	48	53	55	51	50	45	58
<b>75 CNEL</b>							
Newly Exposed Residential Acres	4.07	4.07	0.00	4.66	4.44	4.07	4.07
Newly Exposed Residential Units	41	41	0	46	43	41	41
Newly Exposed Parks	2	2	2	2	2	2	2

Source: PCR Services Corporation, 2012.

As also shown in **Table 1-16**, Alternative 7 would result in the greatest number of residential units, population, and non-residential noise-sensitive facilities that would experience a noise increase of 1.5 CNEL or higher within the 65 CNEL or higher noise contours. Alternative 6 would result in the least number of residential units, population, and non-residential noise-sensitive facilities that would experience a noise increase of 1.5 CNEL or higher within the 65 CNEL or higher noise contours.

Cumulative noise impacts on noise-sensitive uses associated with aircraft noise, road traffic noise, construction traffic and equipment noise, and transit noise and vibration are analyzed in Section 5.5.10 of Chapter 5, *Cumulative Impacts*. As described in Section 5.5.10, the aircraft noise impacts analysis completed for the SPAS EIR accounts for present aircraft operations at LAX (i.e., baseline [2009] conditions) and reasonably foreseeable future aircraft operations at LAX (i.e., future [2025] conditions). As also indicated in that discussion, implementation of any of the SPAS alternatives, including Alternative 1, would result in significant aircraft noise impacts to noise-sensitive uses around the airport. These impacts can be reduced through implementation of LAX Master Plan commitments, compliance with Title

## 1. Introduction and Executive Summary

24 requirements, and review of certain projects located within the airport influence area by the Airport Land Use Commission for compliance with the Los Angeles County ALUP but not to a level that is less than significant. In light of such impacts, implementation of the SPAS alternatives would have a cumulatively considerable contribution to significant future aircraft noise impacts on existing and potential future noise-sensitive uses within the 65 CNEL noise contour.

### Aircraft Noise

As described above under Land Use and Planning Impacts and shown in **Table 1-16**, Alternatives 1 through 7 would each result in some residential uses and non-residential noise-sensitive facilities being newly exposed to noise levels of 65 CNEL or higher or increases of 1.5 CNEL or higher within the 65 CNEL or higher noise contours. **Table 1-17** provides a comparison of the noise exposure impacts of each alternative within the 65 CNEL or higher noise exposure contour for 2025. The density of the population is not constant across the area exposed to noise above 65 CNEL or higher; consequently, while the area of exposure may be similar among alternatives, the numbers of persons, dwellings or non-residential noise-sensitive facilities varies among the alternatives.

**Table 1-17**

**Total Aircraft Noise Exposure Effects - All Alternatives in 2025  
Comparisons to Baseline (2009) and to 2025 "No Additional Improvements" Conditions**

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Acres Off the Airport	4,002	3,998	3,944	3,987	4,018	3,983	3,961
Dwellings	14,641	14,802	14,779	14,874	14,586	14,733	14,756
Population	41,598	42,477	41,594	42,842	41,299	42,045	42,329
Non-Residential Noise-Sensitive Facilities	96	97	98	99	94	95	95
<b>Population Exposed to 65<math>\geq</math> CNEL:</b>							
Change from Baseline (2009) Conditions	13,160	14,039	13,156	14,404	12,861	13,607	13,891
Cumulative Contribution Change from 2025 "No Additional Improvements" Conditions	-1,244	-365	-1,248	N/A	-1,543	-797	-513
<b>Dwellings Exposed to 65<math>\geq</math> CNEL:</b>							
Change from Baseline (2009) Conditions	4,370	4,531	4,508	4,603	4,315	4,462	4,485
Cumulative Contribution Change from 2025 "No Additional Improvements" Conditions	-233	-72	-95	N/A	-288	-141	-118
<b>Non-Residential Noise-Sensitive Facilities Exposed to 65<math>\geq</math> CNEL:</b>							
Change from Baseline (2009) Conditions	43	44	45	46	41	42	42
Cumulative Contribution Change from 2025 "No Additional Improvements" Conditions	-3	-2	-1	N/A	-5	-4	-4

Source: Ricondo & Associates, Inc., 2012 (CNEL noise exposure contours; PCR, 2012 (population, dwelling unit, acreage, and non-residential noise-sensitive facilities; GIS spatial analysis).

**Table 1-18** provides a summary of the population, dwellings, and non-residential noise-sensitive facilities that would be within the 65 CNEL or higher noise exposure contour with the implementation of the various alternatives compared to baseline (2009) conditions. Alternative 5 would result in the least change in number of dwellings exposed to 65 CNEL or higher noise levels (4,315), followed in order by the Alternative 1 (4,370), Alternative 6 (4,462), Alternative 7 (4,485), Alternative 3 (4,508), Alternative 2 (4,531), and Alternative 4 (4,603).

**Table 1-18** summarizes the significant impacts (i.e., increases of 1.5 CNEL and higher within the 65 CNEL and higher noise exposure contour) associated with each alternative relative to the baseline (2009) conditions. Overall, Alternative 6 would result in the lowest numbers of dwellings, population, and non-

## 1. Introduction and Executive Summary

residential noise-sensitive facilities experiencing increases of 1.5 CNEL and higher within the 65 CNEL and higher noise exposure contour and Alternative 7 would result in the highest numbers of such impacts. The numbers of impacts associated with the other alternatives would fall between those of Alternatives 7 and 6. In general, there is not a substantial difference between the alternatives relative to significant noise impacts.

**Table 1-18**

**Increase of 1.5 CNEL Within 65 CNEL Compared to Baseline (2009) Conditions**

Effect Category	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Dwellings	5,296	6,797	5,884	6,020	5,408	4,879	7,325
Population	13,608	18,035	15,099	16,661	13,773	12,705	19,482
Non-Residential Noise-Sensitive Facilities	48	53	55	51	50	45	58

Source: Ricondo & Associates, Inc., 2012 (1.5 CNEL or higher noise exposure contours); PCR, 2012 (population, dwelling unit, acreage, and non-residential noise-sensitive facilities; GIS spatial analysis).

**Table 1-19** provides a comparative summary of the numbers of newly impacted schools that are potentially newly exposed to single event noise above the temporary thresholds of significance developed for this analysis of the alternatives.

**Table 1-19**

**Classroom Disruption Impacts of All Alternatives**

	Baseline (2009) Conditions	Alternative						
		1	2	3	4	5	6	7
<b>Schools</b> - Exposure to Interior Noise of								
≥ 55 dBA $L_{max}$	8	9	8	8	8	9	9	9
≥ 65 dBA $L_{max}$	0	0	0	0	0	0	0	0
≥ 35 dBA $L_{eq(h)}$	22	30	31	29	31	30	30	30

Source: Ricondo & Associates, Inc., 2012 (INM school location exterior noise levels); PCR, 2012 (population, dwelling unit and school databases; GIS spatial analysis).

In each alternative only one additional school is newly exposed to the 55 dBA  $L_{max}$  level. The school, Jefferson Elementary School, is the same in each of the alternatives. With regard to noise exposure at or above 35 dBA  $L_{eq(h)}$ , Alternative 3 has the smallest increase (7 schools newly exposed), followed by Alternatives 1, 5, 6, and 7 (8 schools newly exposed). Alternatives 2 and 4 newly expose 9 schools.

**Table 1-20** provides a comparative summary of percentage change in overall population exposed to the probability of being awakened at least once during the night by single event noise, based on 75-, 50-, and 25-percent change probability contours.

# 1. Introduction and Executive Summary

**Table 1-20**

**Awakening Probability Impacts of All Alternatives**

	Alternative						
	1	2	3	4	5	6	7
Contribution to the Cumulative Change in Population Exposed to Probability of Awakening Compared to 2025 "No Additional Runway Improvements" <sup>1</sup>	-2.4%	1.2%	2.9%	NC	-2.7%	-1.7%	-0.9%

Notes:

NC = No change in probability

<sup>1</sup> Based on average percent change in population for 25-, 50-, and 75-percent probability of awakening contours for each alternative in 2025, compared to 2025 conditions without airfield improvements. Negative numbers indicate a reduction in probability of awakening and positive numbers indicate an increase in probability of awakening.

Source: Ricondo & Associates, Inc., 2012 (INM school location exterior noise levels); PCR, 2012 (population, dwelling unit and school databases; GIS spatial analysis).

As indicated in **Table 1-20**, none of the alternatives would result in a substantial increase in the probability of awakenings; therefore, none of the alternatives would result in a significant impact relative to sleep awakenings.

## Mitigation Evaluation

The airport has a long history of addressing concerns related to aircraft noise. The operational elements of the current LAX noise abatement program are:

- ◆ Use preferred inboard runways for departures and arrivals and interior parallel Taxiways C and E during the hours between 10:00 p.m. and 7:00 a.m. This measure is intended to move nighttime noise to the interior of the airfield and away from noise-sensitive areas adjacent to the airport to the north and south.
- ◆ Weather permitting, between the hours of midnight and 6:30 a.m., use Over-Ocean procedures. These procedures call for arrivals to be made from the west and departures to the west over Santa Monica Bay during the most sensitive night hours.
- ◆ Conduct departures to the west along the runway heading until reaching the coastline. The measure has been the subject of continuing concern to assure better compliance to achieve the desired effect.
- ◆ Ban the use of SuperSonic Transport (SST) aircraft at the airport. This measure was originally adopted to eliminate the potential use of the airport by the Concorde and other proposed SST aircraft.
- ◆ Restrict run-up activity (i.e., routine aircraft engine maintenance tests that require the operation of an engine at high power for extended periods) between 11:00 p.m. and 6:00 a.m. unless specific approval is granted by airport management.
- ◆ Allow the use of reduced thrust departures during west flow operations (i.e., aircraft land and takeoff in a westerly direction). Reduced thrust departures are takeoffs conducted with less than maximum power settings during the takeoff roll and initial climb portion of the operation (until the aircraft reaches approximately 1,000 feet Above Field Elevation (AFE) altitude). The intent of this measure is primarily to reduce noise along the sides of the runways while the aircraft is on the ground or in the first stage of climb.
- ◆ Discourage the use of reduced thrust departures during east flow operations (i.e., aircraft land and takeoff in an easterly direction).

## 1. Introduction and Executive Summary

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- ◆ Encourage the use of departure cutback procedures in accordance with FAA Advisory Circular 91-53A. Thrust cutback procedures are techniques that initiate thrust reductions from takeoff power to a lower level (maximum climb thrust or less) during the climb between 1,000 and 3,000 feet AFE. The intent of the measure is to reduce the loudness of aircraft in the off-airport areas most severely affected by aircraft noise.
- ◆ Continue the use of tug and tow procedures (i.e., aircraft are towed by a ground surface vehicle while aircraft engines are off) in the Imperial Terminal area. The Imperial Terminal is a small area west of Sepulveda Boulevard, north of the I-105. The use of tug and tow procedures is expected to be continued under all future alternatives where applicable.

As further discussed in Section 4.10.1, *Aircraft Noise*, the abatement and mitigation of aircraft noise may be accomplished in two general ways: 1) by reducing the loudness of the noise source or increasing the distance of the noise source from the receptor on the ground or 2) by modifying the receptor to make it less affected by noise. The LAX Master Plan includes a commitment (N-1) and mitigation measures (MM-N-4 and MM-N-5) which require LAX to maintain the current noise abatement program, to modify the program appropriately when existing runways are relocated or reconstructed, and to study making over-ocean procedures mandatory. The following discusses potential abatement of noise by modifications of the noise source. Section 4.9, *Land Use and Planning*, discusses the modification of the noise-sensitive receptors for noise mitigation.

The DOT/FAA Aviation Noise Abatement Policy of 1976, the Airport Safety and Noise Abatement Act of 1979, and the Airport Noise and Capacity Act of 1990 (Pub. L. No. 101-508, 104 Stat. 1388, as recodified at 49 U.S.C. 47521 et seq.; 14 CFR Part 161) outline the framework for a coordinated approach to noise abatement and mitigation of noise impacts. Responsibilities are shared among the airport users, aircraft manufacturers, airport proprietors, federal and state governments, and local governments of communities near the airport. Noise abatement measures should reduce noise impacts; comply with federal, state, and local law; and be safe for aircraft operators, passengers, and residents under the routes of flight.

The following addresses noise abatement measures that would alter the use or configuration of airspace, runways, flight tracks, and airport facilities to reduce or shift the location of noise. These techniques produce either of two effects: the reduction of the overall size of the noise exposure contours or the shift of noise contours to more compatible areas.

### **Reduction of Aircraft Noise Levels**

To reduce the overall noise levels around an airport, it is necessary to reduce the total sound energy emitted by the aircraft. The responsibility for the reduction of aircraft noise at the source has been assumed by the federal government. Congress has established aircraft noise certification levels requiring the manufacturers of new aircraft types to comply with established noise limits. To date, four noise certification stages have been established - Stages 1 through 4.<sup>16</sup> New aircraft types must now comply with the Stage 4 certification standards. Congress has also adopted legislation requiring the retirement of the oldest and loudest aircraft types (Stages 1 and 2) from the commercial aircraft fleet.

Airport operators can try to achieve additional direct noise reductions through the limited means available to them. These include the recommended modification of aircraft operating procedures, the reduction of the number of aircraft operations, the shift in operations from more to less sensitive times of the day, or the replacement of relatively loud aircraft with quieter aircraft. The first option requires the cooperation of pilots and aircraft operators. The latter three options may occur through voluntary adjustments made by aircraft operators but can only be mandated through the adoption of local airport regulations.

### **Modification of Aircraft Operating Procedures**

Aircraft can be operated in many different configurations which can result in differing noise levels on the ground. These configurations relate to engine power settings, flap settings, and rates of climb and descent. Variations in these parameters, all of which directly affect the performance of the aircraft, are

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<sup>16</sup> 14 Code of Federal Regulations (CFR) Part 36.

## **1. Introduction and Executive Summary**

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made by pilots to ensure flight safety in different weather conditions and based on aircraft loads. Under federal law, the pilot in command is ultimately responsible for the safe operation of the aircraft. Accordingly, aircraft operating procedures are the responsibility of the pilot - a responsibility that cannot be superseded by any local regulation. It is possible for airport operators to coordinate with aircraft operators in establishing voluntary measures for operating aircraft so as to reduce noise exposure. In fact, LAWA has previously established policies promoting the use of operating procedures that can reduce noise, as described above. Those include reduced thrust departures and noise abatement departure profiles. It is not legally possible for an airport operator or local government to formalize these operating procedures, and it is difficult to verify the degree to which the procedures are being used. Thus, mandatory modifications of aircraft operating procedures are not feasible.

### **Airport Operating Regulations**

Local regulations would be needed to implement mandatory reductions in airport operations, shifts in flight schedules, or changes in aircraft permitted to operate at the airport. With the adoption of the Airport Noise and Capacity Act of 1990, Congress required that airport operators could adopt such regulations only upon completion of a detailed study of the potential impacts of and alternatives to the proposed regulations. In most cases, the regulations can be adopted only after explicit FAA approval of the proposed restrictions.<sup>17</sup> Before the FAA will consider a proposal to adopt a noise or access restriction, the airport sponsor must complete an analysis in compliance with 14 CFR Part 161. The analysis must demonstrate that the proposed restriction would meet the following six statutory conditions:

- ◆ Condition 1: The restriction is reasonable, nonarbitrary, and nondiscriminatory.
- ◆ Condition 2: The restriction does not create an undue burden on interstate or foreign commerce.
- ◆ Condition 3: The proposed restriction maintains safe and efficient use of the navigable airspace.
- ◆ Condition 4: The proposed restriction does not conflict with any existing Federal statute or regulation.
- ◆ Condition 5: The applicant has provided adequate opportunity for public comment on the proposed restriction.
- ◆ Condition 6: The proposed restriction does not create an undue burden on the national aviation system.<sup>18</sup>

In accordance with LAX Master Plan Mitigation Measure MM-N-5, LAWA is currently preparing a 14 CFR Part 161 Study for LAX, seeking federal approval of a locally-imposed Noise and Access Restriction on departures to the east during Over-Ocean Operations, or when Westerly Operations remain in effect during the Over-Ocean Operations time period.

### **Shifting Noise to Compatible Areas**

Because of obstacles to the direct reduction of aircraft noise levels, it is more effective for airport operators to focus on the noise abatement methods that shift noise from sensitive areas (such as residential neighborhoods) to compatible areas (such as industrial areas). This can be accomplished through changes in runway use and arrival or departure routes or through facility changes on the airport itself, such as the modification of runways or the construction of noise barriers.

### **Runway Use and Flight Route Changes**

The use of particular runways for aircraft landings and takeoffs is dictated by several factors, including the length of the runway, the runway gradient (or slope), the instrument approach procedures available to the runway, the minimum departure climb requirements from the runway, and the wind and weather. It is possible to establish runway use programs that encourage the use of runways that direct aircraft over compatible land uses and away from noise-sensitive areas, although allowances for exceptions must be

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<sup>17</sup> Any restrictions that would affect aircraft complying with the Stage 3 noise certification requirements of 14 CFR Part 36 can be adopted only after FAA approval of the proposed restriction. See 14 CFR Part 161, Notice and Approval of Airport Noise and Access Restrictions, Subpart D.

<sup>18</sup> 14 Code of Federal Regulations (CFR) Part 161, Section 161.305.

made in recognition of the many other factors influencing the selection of runways for safe flight operations. LAWA previously established and currently implements the Preferential Runway Use Policy to reduce aircraft noise impacts to noise-sensitive uses (i.e., aircraft departures typically occurring on the inboard runways and aircraft arrivals typically occurring on the outboard runways, thereby placing the noisier of the two types of operations away from noise-sensitive uses).

Subject to certain limitations, aircraft routes can also be altered so that aircraft tend to fly over compatible areas and away from the most noise-sensitive areas. However, numerous constraints on the design of flight routes must be considered before changes are made. In large metropolitan areas with multiple airports, the volume of aircraft alone creates serious constraints. Flight routes must be designed to ensure the safe separation of aircraft and to ensure that arrivals and departures from each airport can be made safely and with relative efficiency. The control of aircraft in flight is the responsibility of the FAA. Thus, if airport operators desire to pursue changes in aircraft flight routes, they must coordinate with the FAA in undertaking the studies required to determine if the modifications are feasible.

### **Airport Facilities**

The construction and alteration of airport facilities can either directly or indirectly affect noise levels off the airport. Noise barriers, for example, can reduce the noise from aircraft ground operations that are heard off airport property. LAWA has already constructed noise barriers along the northern edge of the airport to reduce runway noise impacts to noise-sensitive uses to the north. Additionally, the LAX Master Plan and the LAX Noise Variance from the state include provisions for the future installation of two ground run-up enclosures at LAX. Changes in runway length can alter noise patterns, as can the construction of new runways. The construction of taxiways can alter runway use by making the use of a given runway more convenient and safer for aircraft operators. Alternatives 1, 2, 3, 5, 6, and 7 include high-speed exists for arriving aircraft to exit from the runway and transition onto a taxiway that directs aircraft away from noise-sensitive uses located to the north. Other airport facility improvements that serve to reduce aircraft noise impacts include the electrification of all passenger gates at LAX, along with the installation of pre-conditioned (i.e., cooled) air systems, to reduce the need for parked aircraft to operate the on-board auxiliary power unit (i.e., turbine engine that provides power and cooling to the aircraft).

The following summarizes the mitigation evaluation for each alternative.

### **Alternative 1**

Alternative 1 would entail a northbound shift of the centerlines of Runways 6L/24R. Relocated Runway 6L/24R is planned 260 feet north of the existing Runway 24R centerline. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*. To continue noise abatement techniques, new/replacement procedures are assumed for westerly departures from each relocated runway end to ensure that aircraft reach the coastline before making turns.

### **Alternative 2**

Alternative 2 would maintain current north airfield runways, but provide an extension to the east for Runways 6R/24L. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*. To continue noise abatement techniques, new/replacement procedures are assumed for westerly departures from each relocated runway end to ensure that aircraft reach the coastline before making turns.

### **Alternative 3**

The extension of Runway 24L would shift the 65 CNEL contour to the east, into an area not exposed to levels of 65 CNEL under baseline (2009) conditions. The retention of the existing runway end as a takeoff initiation position for aircraft capable of using the available runway length for departure (9,100 feet) would not substantially relieve that increase. The noise abatement measures listed above would

## **1. Introduction and Executive Summary**

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continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*.

### **Alternative 4**

Alternative 4 would maintain the existing north airfield runways. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*.

### **Alternative 5**

Alternative 5 would entail a northbound shift of the centerlines of Runways 6L/24R. Relocated Runway 6L/24R is planned 350 feet north of the existing Runway 24R centerline. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*. To continue noise abatement techniques, new/replacement procedures are assumed for westerly departures from each relocated runway end to ensure that aircraft reach the coastline before making turns.

### **Alternative 6**

Alternative 6 would entail a northbound shift of the centerlines of Runways 6L/24R. Relocated Runway 6L/24R is planned 100 feet north of the existing Runway 24R centerline. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*. To continue noise abatement techniques, new/replacement procedures are assumed for westerly departures from each relocated runway end to ensure that aircraft reach the coastline before making turns.

### **Alternative 7**

Alternative 7 would entail a southbound shift of the centerlines of Runways 6R/24L. Relocated Runway 6R/24L is planned 100 feet south of the existing Runway 24L centerline. The noise abatement measures listed above would continue to be implemented, as would all other current measures. Land use measures to mitigate noise impacts are identified in **Table 1-6** above and discussed in Section 4.9, *Land Use and Planning*. To continue noise abatement techniques, new/replacement procedures are assumed for westerly departures from each relocated runway end to ensure that aircraft reach the coastline before making turns.

Although LAX Master Plan Commitment N-1, Maintenance of Applicable Elements of Existing Aircraft Noise Abatement Program, and LAX Master Plan Mitigation Measure MM-N-4, Update the Aircraft Noise Abatement Program Elements as Applicable to Adapt to the Future Airfield Configuration, would reduce aircraft noise impacts compared with conditions that would exist without those measures, they cannot fully mitigate the noise impacts associated with implementation of any of the SPAS alternatives. Further, no other operational noise abatement measures are available to fully mitigate the noise impacts of the SPAS alternatives.

**Table 1-21** summarizes the number of dwellings and noise-sensitive facilities subject to significant noise impacts for each alternative.

Table 1-21

Increase of 1.5 CNEL Within 65 CNEL Compared to Baseline (2009) Conditions

Effect Category	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7
Dwellings	5,296	6,797	5,884	6,020	5,408	4,879	7,325
Non-Residential Noise-Sensitive Facilities	48	53	55	51	50	45	58

Source: Ricondo & Associates, Inc., 2012 (1.5 CNEL or higher noise exposure contours); PCR, 2012 (population, dwelling unit, acreage, and non-residential noise-sensitive facilities; GIS spatial analysis).

Table 1-22 summarizes the increase in schools subject to significant single event noise exposure for each alternative.

Table 1-22

Additional Schools Exposed to Significant Noise Impacts for Each Alternative  
2025 Noise Exposure

	Alternative						
	1	2	3	4	5 <sup>1</sup>	6 <sup>1</sup>	7 <sup>1</sup>
<b>Schools</b> - Exposure to Interior Noise of							
≥ 55 dBA L <sub>max</sub>	1	0	0	0	1	1	1
≥ 65 dBA L <sub>max</sub>	0	0	0	0	0	0	0
≥ 35 dBA L <sub>eq(h)</sub>	8	9	7	9	8	8	8

<sup>1</sup> Classroom disruption impacts for Alternatives 5, 6, and 7 are estimated to be comparable to those of Alternative 1.

Source: Ricondo & Associates, Inc., 2012 (INM school location exterior noise levels); PCR, 2012 (population, dwelling unit and school databases; GIS spatial analysis).

LAX Master Plan Mitigation Measure MM-LU-1, Implement Revised Aircraft Noise Mitigation Program, would incorporate all eligible dwellings and non-residential noise-sensitive facilities that are newly exposed to noise levels 65 CNEL or higher into the ANMP to mitigate the significant noise impacts described in **Table 1-21**.

LAX Master Plan Mitigation Measures MM-LU-3, Conduct Study of the Relationship Between Aircraft Noise Levels and the Ability of Children to Learn, and MM-LU-4, Provide Additional Sound Insulation for Schools Shown by MM-LU-3 to be Significantly Impacted by Aircraft Noise, would ultimately serve to mitigate adverse noise impacts on schools presented in **Table 1-22**.

Together, the LAX Master Plan noise and land use mitigation measures are intended to fully mitigate the significant noise impacts that would be caused by the SPAS alternatives. Because the land use mitigation measures would take several years to fully implement, it is possible that significant noise impacts would be experienced in the area after implementation of the selected SPAS alternative but before the mitigation measures are fully implemented. Thus, significant and unavoidable interim noise impacts would be experienced over an indeterminate period of time. In addition, as further discussed in Section 4.9, *Land Use and Planning*, certain residential uses with outdoor private habitable areas, or parks would be newly exposed to noise levels of 75 CNEL or higher. These noise impacts would also be significant and unavoidable.

# 1. Introduction and Executive Summary

## Road Traffic Noise

The ground access improvements proposed under Alternatives 1, 2, 3, 4, 8, and 9 would result in changes in road traffic noise levels at off-site noise-sensitive receptors. The predicted changes in road traffic noise levels under each of these alternatives would be less than a 3 A-weighted decibel (dBA) increase in CNEL; therefore, the road traffic noise impacts associated with Alternatives 1, 2, 3, 4, 8, and 9 would be less than significant. Alternatives 5, 6, and 7 do not include ground access improvements and would therefore not affect road traffic noise levels at off-site noise-sensitive uses.

Regarding cumulative impacts, as discussed in Section 5.5.10.2 in Chapter 5, *Cumulative Impacts*, the increases in road traffic noise anticipated to occur between baseline (2010) conditions and future (2025) conditions, including the projected growth in regional traffic combined with the effects of each SPAS alternative, would not result in a 3+ dBA CNEL increase at any of the noise-sensitive receptor locations evaluated. As such, cumulative road traffic noise impacts would be less than significant.

## Construction Traffic and Equipment Noise

None of the alternatives would result in significant impacts related to construction traffic noise; however, all nine alternatives would result in significant impacts from construction equipment noise. The sources of those impacts can be generally characterized and compared in terms of those associated with airfield improvements, those associated with ground access system improvements, and those associated with construction staging areas. The impacts of the alternatives from construction equipment noise are summarized in **Table 1-23** and in the text below.

Table 1-23

Summary of Construction Equipment Noise Impacts After Mitigation

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<b>Impacts Associated with Airfield Improvements</b>									
Residential Uses in Playa del Rey	LS	LS	LS	NI	LS	LS	LS	NA	NA
Saint Bernard High School	SU	LS	LS	LS	SU	LS	LS	NA	NA
Residential Uses Along Southern Edge of Westchester	SU	LS	LS	LS	SU	LS	LS	NA	NA
Park West Apartments Northwest on Lincoln Boulevard South of La Tijera	SU	LS	LS	LS	SU	SU	LS	NA	NA
Residential Uses Along 88th Street between Liberator Avenue and Sepulveda Westway	LS	NA	NA						
<b>Impacts Associated with Ground Access Improvements</b>									
Noise-Sensitive Uses North of Parking Lots C and D and "Jenny Lot"	NI	NI	SU	SU	NA	NA	NA	NI	NI
Remaining Residences within Belford	SU	SU	SU	SU	NA	NA	NA	SU	SU
Noise-Sensitive Uses within Manchester Square	SU	SU	NI	NI	NA	NA	NA	SU	SU
Animo Leadership Charter High School	SU	SU	SU	NI	NA	NA	NA	SU	SU
Residential Uses within City of Inglewood	LS	LS	LS	NI	NA	NA	NA	LS	LS
Residential Uses within Del Aire	NI	NI	SU	SU	NA	NA	NA	NI	NI
Residential Uses within El Segundo	NI	NI	LS	NI	NA	NA	NA	NI	NI
<b>Impacts Associated with Construction Staging Areas</b>									
<u>Construction Staging Area A</u>									
Residential Uses in Playa del Rey	LS								
Saint Bernard High School	SU								
Residential Uses Along Southern Edge of Westchester	LS								
Park West Apartments Northwest of Lincoln Boulevard South of La Tijera	SU								
<u>Construction Staging Areas B, C, and D</u>									
Residential Uses Along 88th Street between Liberator Avenue and Sepulveda Westway	LS								
<u>Construction Staging Area E</u>									
Remaining Residences within Belford	SU								

# 1. Introduction and Executive Summary

Table 1-23

Summary of Construction Equipment Noise Impacts After Mitigation

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
<u>Construction Staging Area F</u>									
Noise-Sensitive Uses within Manchester Square	SU								
Animo Leadership Charter High School	SU								
Residential Uses within City of Inglewood	LS								
<u>Construction Staging Area G</u>									
Residential Uses within Del Aire	LS								

Notes:

NI = No Impact  
 LS = Less Than Significant Impact  
 SU = Significant Unavoidable Impact  
 NA = Not Applicable

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

Source: CDM Smith, 2012.

## Airfield Improvements

Alternatives 1, 5, and 6 would result in significant construction equipment noise impacts at noise-sensitive receptors north of the north airfield, including Saint Bernard High School (Alternatives 1 and 5), residential units along the southern edge of Westchester nearest to the airfield (Alternatives 1 and 5), and the Park West Apartments on Lincoln Boulevard just north of Westchester Parkway (Alternatives 1, 5, and 6). The impacts would occur primarily from construction activity associated with the northward relocation of Runway 6L/24R, and associated covering of the Argo Drainage Channel and realignment of Lincoln Boulevard, under these alternatives. Under Alternative 6, which would relocate Runway 6L/24R 100 feet to the north, only the eastern portion of the Argo Drainage Channel would need to be covered, which would reduce the potential for significant construction equipment noise impacts at the high school site and the southern edge of Westchester.

Under Alternatives 2, 3, 4, and 7, the proposed airfield improvements, which include, depending on the alternative, the southward relocation of Runway 6R/24L, taxiway improvements between the two existing runways, and runway extensions, would occur farther south than those of the alternatives described above; therefore, construction equipment noise impacts associated with airfield improvements under these alternatives would be less than significant.

## Ground Access System Improvements

Under Alternatives 1, 2, 3, 4, 8, and 9, there is the potential for significant construction equipment noise impacts to residential uses within Belford and Manchester Square only if those uses are present and occupied at the time when construction of the ITF, elevated busway or APM, and a CONRAC and/or parking within Manchester Square occurs. Both Belford and Manchester Square are included in a voluntary property acquisition program designed to remove residential uses from areas that are subject to high noise levels from aircraft operations and the majority of the two areas has been cleared. Under that

## ***1. Introduction and Executive Summary***

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program, all residential uses within the two subject areas would ultimately be vacated/removed. Additionally, there are presently two schools within Manchester Square that are noise-sensitive receptors.

In addition to residential uses and schools within Manchester Square, there is a charter high school located immediately to the north, which would be subject to significant construction equipment noise impacts from development of transportation-related improvements in Manchester Square under Alternatives 1, 2, 3, 8, and 9.

Under Alternatives 3 and 4, a CONRAC and associated parking would be developed within the area currently occupied by LAX parking lots C and D and "the Jenny Lot." The existing residential and park uses located immediately to the northwest, north, and northeast, as well as the potentially remaining residential uses within Belford to the east, would be subject to significant construction equipment noise impacts. Alternatives 3 and 4 could also result in significant impacts to residences in Del Aire associated with construction of the ITC and the parking structure, respectively.

Under all of these alternatives, LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the impacts identified above would be reduced to a level that is less than significant. As such, impacts associated with construction equipment noise under Alternatives 1, 2, 3, 4, 5, 6, 8, and 9 are considered to be significant and unavoidable.

### **Construction Staging Areas**

The following summary of noise impacts related to the development and use of potential construction staging areas applies to all alternatives.

The development and use of Construction Staging Area A would result in significant impacts at Saint Bernard High School and the Park West Apartments northwest of Lincoln Boulevard south of La Tijera. Other noise-sensitive land uses in the general area, such as residential uses in Playa del Rey, and residential uses along the southern edge of Westchester, would not be significantly impacted because they are sufficiently distant from the construction staging area.

In addition, the development and use of Construction Staging Areas B, C, and D would not significantly impact noise-sensitive residential uses nearby along West 88th Street, based on how far away the construction staging activities would occur and/or the nature of staging activities anticipated and the presence of an existing 8- to 20-foot-high sound walls (noise barriers).

Should any remaining residential units in Belford be occupied at the time Construction Staging Area F is needed for use, construction staging activities occurring in close proximity to those units would result in a significant noise impact.

Similar to above, should any remaining residential units or school facilities within Manchester Square be occupied/active when Construction Staging Area F is used, the presence of construction staging activities occurring nearby units would result in a significant noise impact. Additionally, construction staging activities along the northern edge of Construction Staging Area F would significantly impact the Animo Leadership Charter High School,<sup>19</sup> which is approximately 75 feet north of the subject area.

The development and use of Construction Staging Area G would not significantly impact the nearest noise-sensitive use, residential development in Del Aire, because the subject use is sufficiently distant from the construction staging area.

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<sup>19</sup> At the publication time of the Notice of Preparation for the SPAS Draft EIR, October 2010 (i.e., the baseline year for the EIR impacts analysis), the Animo Leadership Charter High School was located at the northeast corner of Aviation Boulevard and Arbor Vitae Street, across from Manchester Square. This school is, however, proposed to move to a new location in Lennox, approximately 2.5 miles from the current site (see <http://anewhomeforanimoleadership.wordpress.com/abouttheproject/>. Accessed on June 16, 2012). It is anticipated that the new facility and relocation will be completed in 2012. At the time of this writing, the school was still at the Arbor Vitae Street location; hence, it is included in the impacts analysis.

## Cumulative Impacts

There is not sufficient information at this conceptual level of planning to estimate the construction schedules, construction traffic trip generation, or trip distribution associated with the various development projects, including the SPAS alternatives. Notwithstanding, it is considered unlikely that the nature, location, and timing of the various construction projects would coincide such that traffic volumes on the nearby arterial roadways and highways would double or triple, thereby resulting in significant construction traffic noise impacts. Even using very conservative assumptions regarding construction-related traffic generation and distribution for a recent major development project at LAX (i.e., the Bradley West Project), the traffic volumes on nearby arterial roadways and freeways did not double or triple. It would be speculative at this conceptual level of planning to estimate the nature, timing, and construction traffic characteristics of major improvements projects particular to each of the SPAS alternatives along with the nature, timing, and construction traffic characteristics of other development projects that may occur between now and 2025, such that a specific combination of projects would result in a doubling or tripling of traffic on specific roadways in the airport vicinity. Regarding increases in road traffic noise associated with regional growth anticipated to occur by 2025, please see the discussion under the heading of Road Traffic Noise above.

As described in detail in Section 5.5.10.3 in Chapter 5, *Cumulative Impacts*, significant cumulative construction noise impacts from cumulative projects combined with SPAS improvements could occur under all of the SPAS alternatives and the contribution of the SPAS alternatives to the significant cumulative impacts would be cumulatively considerable.

## Transit Noise and Vibration

### Transit Noise

Alternatives 1, 2, and 8 would result in significant transit noise impacts at noise-sensitive receptors (hotels) associated with the elevated/dedicated busway system proposed under these alternatives. Although Alternative 8 proposes the same elevated/dedicated busway system as that of Alternatives 1 and 2, the average daily transit noise levels and associated impacts of Alternative 8 would be comparatively greater due to greater number of hourly operations during the daytime hours (i.e., 128 trips per hour versus 54), which is mostly attributable to the CONRAC proposed under Alternative 8. Alternatives 1 and 2 would result in a significant transit noise impact at two hotels (Four Points Sheraton and Hilton Hotel), while Alternative 8 would result in a significant transit noise impact at three hotels (Courtyard by Marriott, Four Points Sheraton, and Hilton Hotel). Implementation of Mitigation Measure MM-N (SPAS)-1, Elevated/Dedicated Busway Noise Assessment and Control Plan, described in Section 4.10.4, *Transit Noise and Vibration*, would reduce noise impacts associated with the elevated/dedicated busway system under Alternatives 1, 2, and 8 to a level that is less than significant.

Alternative 3 would result in potential increases of 3 dBA CNEL or more at six hotels (Courtyard by Marriott, Embassy Suites, Renaissance Hotel, Four Points Sheraton, Hilton Hotel, and Crown Plaza Hotel) from operation of the two APM systems proposed under this alternative. However, with implementation of mitigation already required under the LAX Master Plan, transit noise impacts under Alternative 3 would be less than significant.

Although the APM operations proposed under Alternative 9 would result in an increase in ambient noise levels at noise-sensitive receptors (hotels), such increases would be less than significant.

Alternatives 4, 5, 6, and 7 do not propose an elevated/dedicated busway system or APM system; as such, these alternatives would not result in any transit-related noise impacts.

The only past, present, or reasonably foreseeable future projects posing the potential to result in a cumulative transit noise and vibration impact would be the combination of the transit improvements proposed under several of the SPAS alternatives (specifically, the elevated/dedicated busway system proposed under Alternatives 1, 2, and 8, and the APM systems proposed under Alternatives 3 and 9), the recently approved Metro Crenshaw/LAX Transit Corridor Project, and the proposed Airport Metro Connector Project, depending on the selected alternative. As described in Section 5.5.10.4 in Chapter 5,

## **1. Introduction and Executive Summary**

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*Cumulative Impacts*, there would be no cumulative transit noise and vibration impacts from the combination of the Metro Crenshaw/LAX Line and the SPAS alternatives which propose transit improvements (Alternatives 1, 2, 3, 8, and 9).

The Airport Metro Connector Line is proposed to extend between the LAX CTA and the new Metro station planned near Century Boulevard/Aviation Boulevard as part of the Metro Crenshaw/LAX Transit Corridor Project. The Airport Metro Connector Project is still in the early stages of conceptual planning and the range of alternatives, including system design choices (i.e., bus rapid transit, fixed-rail, light-rail, etc.) and route alignments, to be further investigated and advanced to the EIS and EIR has not been determined. While it is possible that the alternatives would include potential alignments along Century Boulevard and 98th Street, which would expose hotels along those routes to transit-related noise and vibration, it would be speculative at this time to attempt to quantify potential noise and vibration impacts from the Airport Metro Connector Project, as may combine with the noise and vibration impacts of Alternatives 1, 2, 3, 8, and 9. Additionally, it would be speculative to estimate and account for how the SPAS transit options might change in design and operation if the Airport Metro Connector Line is operating on a shared or parallel corridor. As such, it is considered too speculative to draw conclusions at this time regarding cumulative noise and vibration impacts from the combination of the Airport Metro Connector Project and the SPAS alternatives that propose transit improvements (Alternatives 1, 2, 3, 8, and 9).

### **Transit Vibration**

Transit-related ground-borne vibration would be less than significant for all the modeled alternatives - Alternatives 1, 2, 3, 8, and 9. Alternatives 4, 5, 6, and 7 do not propose an elevated/dedicated busway system or APM system; as such, these alternatives would not result in any transit vibration impacts.

Please see the discussion above under Transit Noise regarding cumulative transit vibration impacts.

### **Fire Protection**

Airfield improvements under Alternatives 1, 2, 3, 4, 5, 6, and 7 would enhance the safety and efficiency of the airfield compared to baseline conditions, thereby decreasing the potential need for emergency fire response associated with airfield accidents. Improvements to fire stations serving LAX, along with LAX Master Plan Commitments FP-1, Los Angeles Fire Department (LAFD) Design Recommendations, and PS-2, Fire and Police Facility Space and Siting Requirements, and enforcement of FAR and fire code requirements, would ensure maintenance of adequate response times, staffing, equipment, facilities, and emergency access in association with airfield improvements. Therefore, impacts to fire protection services related to airfield improvements under Alternatives 1, 2, 3, 4, 5, 6, and 7 would be less than significant. No airfield improvements are associated with Alternatives 8 and 9.

LAX Master Plan Commitments FP-1, LAFD Design Recommendations, and PS-2, Fire and Police Facility Space and Siting Requirements, as well as enforcement of FAR and fire code requirements, would ensure maintenance of adequate response times, facilities, and emergency access associated with development of new terminal areas under Alternatives 1, 2, 3, 5, 6, and 7. Potential impacts associated with staffing, equipment, and facilities would also be continually evaluated and addressed pursuant to standard LAFD procedures and fire code requirements. Moreover, upgraded fire protection facilities and the recently completed Airport Response Coordination Center (ARCC) are expected to enhance fire protection and support demand for fire services at LAX into the foreseeable future. Therefore, impacts to fire protection services associated with terminal improvements under Alternatives 1, 2, 3, 5, 6, and 7 would be less than significant. No terminal improvements are associated with Alternatives 4, 8, and 9.

Construction of ground access improvements under Alternatives 1, 2, 3, 4, 8, and 9 would reduce traffic congestion and curb-front demands, which would reduce the potential for automobile collisions, automobile/pedestrian conflicts, and automobile-related emergency response incidents at the compared to baseline conditions. Improved traffic flow associated with the new ground access facilities is also expected to improve response times for fire protection services. Potential impacts to fire protection and emergency services would be further reduced by LAX Master Plan Commitments FP-1, LAFD Design Recommendations, and PS-2, Fire and Police Facility Space and Siting Requirements. Furthermore, fire

facilities serving LAX have been recently expanded to improve service at LAX. Therefore, impacts to fire protection services associated with ground access improvements under Alternatives 1, 2, 3, 4, 8, and 9 would be less than significant. No ground access or parking improvements are associated with Alternatives 5, 6, and 7.

Under all alternatives, traffic congestion associated with construction of the proposed improvements would have the potential to hamper or delay emergency response. However, temporary roadway delays would be reduced or avoided through LAX Master Plan Commitment C-1, Establishment of a Ground Transportation/Construction Coordination Office. In addition, LAX Master Plan Commitments ST-9, Construction Deliveries, ST-12, Designated Truck Delivery Hours, ST-14, Construction Employee Shift Hours, ST-17, Maintenance of Haul Routes, ST-18, Construction Traffic Management Plan, ST-19, Closure Restrictions of Existing Roadways, ST-21, Construction Employee Parking Locations, and ST-22, Designated Truck Routes, would serve to further reduce potential traffic congestion during construction. Therefore, impacts to emergency response times related to construction of the proposed improvements under all of the alternatives would be less than significant.

Cumulative impacts to fire protection services and facilities as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Law Enforcement**

Airfield improvements under Alternatives 1, 2, 3, 4, 5, 6, and 7 would enhance the safety and efficiency of the airfield compared to baseline conditions, thereby decreasing demand on law enforcement services and personnel associated with airfield accidents. Therefore, impacts to law enforcement services and facilities related to airfield improvements under Alternatives 1, 2, 3, 4, 5, 6, and 7 would be less than significant. No airfield improvements are associated with Alternatives 8 and 9.

LAX Master Plan Commitments LE-1, Routine Evaluation of Manpower and Equipment Needs, and LE-2, Plan Review, would ensure that law enforcement staffing, facilities, and equipment keep pace with forecast increases in activity and development at LAX, and would require consultation with law enforcement agencies in the development of new facilities, including terminal facilities. Thus, impacts to law enforcement services and facilities associated with terminal improvements and/or increased passenger activity under all of the alternatives would be less than significant.

Ground access improvements under Alternatives 1, 2, 3, 8, and 9 would reduce traffic congestion and curb-front demands, which would reduce the potential for automobile collisions, automobile/pedestrian conflicts, and automobile-related emergency response incidents, and improve the overall safety and security characteristics of the airport. Improved traffic flow associated with the new ground access facilities is also expected to improve response times for law enforcement. Potential impacts on law enforcement staffing and services due to ground access improvements would be reduced to a less than significant level with implementation of LAX Master Plan Commitments LE-1, Routine Evaluation of Manpower and Equipment Needs, and LE-2, Plan Review. Thus, impacts to law enforcement services and facilities associated with ground access and parking improvements under Alternatives 1, 2, 3, 8, and 9 would be less than significant. Under Alternative 4, which includes a CONRAC but does not include any other ground access facilities, there would be increased demand for law enforcement services associated with increased airport-related traffic. As with Alternatives 1, 2, 3, 8, and 9, impacts to law enforcement services and facilities associated with ground access and parking improvements under Alternative 4 would be reduced to a less than significant level with implementation of LAX Master Plan Commitments LE-1, Routine Evaluation of Manpower and Equipment Needs, and LE-2, Plan Review. No ground access or parking improvements are associated with Alternatives 5, 6, and 7.

Under Alternatives 1, 2, 3, 5, 6, 7, 8, and 9, the Los Angeles World Airports Police Division (LAWAPD) station and associated facilities located at West 96th Street would be removed. It is anticipated that these facilities would be relocated to the future LAX Public Safety Building and Supporting Facilities that is being planned independent of SPAS. LAX Master Plan Commitments PS-1, Fire and Police Facility Relocation Plan, and PS-2, Fire and Police Facility Space and Siting Requirements, would reduce this

## **1. Introduction and Executive Summary**

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impacts. Nevertheless, because the location, timing, and characteristics of the replacement LAX Public Safety Building and Supporting Facilities have yet to be determined, and these factors as well as gaps in service could occur and degrade service and response times, impacts on LAWAPD facilities would be significant. Implementation of SPAS Mitigation Measure MM-LE (SPAS)-1, LAWAPD Replacement Facilities, described in Section 4.11.2, *Law Enforcement*, would reduce potential impacts to law enforcement services and facilities associated with Alternatives 1, 2, 3, 5, 6, 7, 8, and 9 to a level that is less than significant. In the event interim facilities are required under Mitigation Measure MM-LE (SPAS)-1, no significant impacts would occur as the temporary facilities would be housed within existing available space and/or trailers and modular buildings that would involve limited, if any, construction. Alternative 4 would not require the relocation of the LAWAPD and associated facilities.

Under all of the alternatives, traffic congestion associated with construction activities would have the potential to hamper or delay response times and increase traffic patrol and other law enforcement activities. Potential impacts related to construction would be reduced or avoided with implementation of LAX Master Plan Commitment C-1, Establishment of a Ground Transportation/Construction Coordination Office. In addition, LAX Master Plan Commitments ST-9, Construction Deliveries, ST-12, Designated Truck Delivery Hours, ST-14, Construction Employee Shift Hours, ST-17, Maintenance of Haul Routes, ST-18, Construction Traffic Management Plan, ST-19, Closure Restrictions of Existing Roadways, ST-21, Construction Employee Parking Locations, and ST-22, Designated Truck Routes, would serve to reduce traffic impacts during construction. Therefore, impacts to law enforcement services related to construction of improvements under all of the alternatives would be less than significant.

Cumulative impacts to law enforcement services and facilities as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **On-Airport Transportation**

The analysis of on-airport transportation addresses traffic impacts within the CTA as related to curbside operations, intersections, and roadway links. The analysis also addresses demand for parking. The analysis focuses on SPAS alternatives that propose ground access improvements, including Alternatives 1, 2, 4, 8, and 9. On-airport transportation impacts were not addressed for the other alternatives because under Alternative 3, the CTA would be closed to private vehicles, and Alternatives 5 through 7 focus on airfield improvements only.

#### **Curbside Operations**

No significant impacts to curbside operations would occur under any of the alternatives addressed (Alternatives 1, 2, 4, 8, and 9) relative to Baseline (2009) versus Baseline (2009) With Alternative impact analyses. For Future (2025) versus Future (2025) With Alternative conditions, all of the alternatives would have a significant cumulative impact at the inner curbside at TBIT on the arrivals level.

#### **Intersections**

No significant impacts to on-airport intersections would occur under any of the alternatives addressed (Alternatives 1, 2, 4, 8, and 9) relative to Baseline (2009) versus Baseline (2009) With Alternative impact analyses. For Future (2025) versus Future (2025) With Alternative conditions, all of the alternatives would have a significant cumulative impact at the intersection of World Way South and Center Way (Airport exit on lower level).

#### **Roadway Links**

No significant impacts to on-airport roadway links would occur under any of the alternatives addressed (Alternatives 1, 2, 4, 8, and 9) relative to the Baseline (2009) versus Baseline (2009) With Alternative impact analyses. For Future (2025) versus Future (2025) With Alternative conditions, Alternatives 1 and 2 would have significant cumulative impacts at three roadway links, all on the arrivals level; Alternative 4 would have significant cumulative impacts at five roadway links, all on the arrivals level; Alternative 8 would

have significant cumulative impacts at three roadway links, all on the arrivals level; and Alternative 9 would have significant cumulative impacts at one roadway link, located on the arrivals level.

### Public Parking Impacts

The airport's public parking supply in each of the Future (2025) alternative scenarios is sufficient to accommodate the airport's estimated future (2025) public parking demand for all the alternatives; supplies which are assumed to be 15 percent greater than the space demand to account for fluctuations in vehicles arrivals in the facilities. Therefore, impacts associated with parking are considered less than significant.

### Construction Impacts

With the exception of Alternative 4, which does not propose improvements in or near the on-airport transportation system, all of the alternatives would result in significant construction-related impacts to the on-airport transportation system.

### Off-Airport Transportation

The off-airport transportation analysis for the SPAS alternatives addresses traffic-related impacts outside the airport boundaries, including arterial roads, highway segments, and ramps that serve traffic approaching and departing the airport environs. The off-airport transportation analysis focuses on SPAS alternatives that propose ground access improvements, including Alternatives 1, 2, 3, 4, 8, and 9. Alternative 5, 6, and 7, which focus on airfield improvements, would not, in themselves, result in off-airport transportation impacts.<sup>20</sup>

A summary of the impacts to the off-airport transportation system associated with the SPAS alternatives is provided in **Table 1-24** and in the text below. Alternatives 1, 2, 3, 4, 8, and 9 would all have operational impacts to intersections and Los Angeles County Congestion Management Plan (CMP) facilities, including impacts with respect to arterials, freeway segments, and transit demand when compared to either Baseline (2010) Without Alternative conditions or Future (2025) conditions. Potential intersection improvements were identified for all of the intersections that could be impacted by the alternatives. Such improvements include the addition of, or improvements to, travel lanes and turn lanes, traffic signal enhancements, and intersection restriping. Improvements that were considered in the analysis are identified in Section 4.12.2.7.1. In some cases, it was determined that the improvements would not be feasible due to right-of-way issues, physical constraints, other planned improvements, or motorist safety concerns. In other cases, the recommended improvements would only partially mitigate the impact. In still other cases, it would be feasible to implement the mitigation under consideration. The final mitigation measures resulting from this analysis are identified in Section 4.12.2.7.2.

**Table 1-24** identifies the impacts associated with each alternative following the implementation of the recommended SPAS-specific mitigation measures identified in Section 4.12.2.7.2. As illustrated in **Table 1-24**, Alternative 1, 2, 3, 4, 8, and 9 would all have significant and unavoidable impacts to intersections when compared to either Baseline (2010) Without Alternative conditions or Future (2025) conditions. When comparing to Baseline (2010) Without Alternative conditions, Alternative 3 would have the greatest number of significant, unavoidable impacts (11 intersections) after mitigation, whereas Alternatives 1 and 2 would have the fewest (1 intersection each). When comparing to Future (2025) conditions, Alternatives 8 and 9 would have the greatest number of significant, unavoidable impacts (44 intersections) after mitigation, and Alternative 3 would have the fewest (37). Alternatives 1 and 2 would have 39 significant and unavoidable impacts after mitigation. Alternative 4 would have significant, unavoidable impacts to 40 intersections after mitigation.

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<sup>20</sup> The airfield and terminal improvements associated with Alternatives 5, 6, and 7 could ostensibly be paired with the ground access improvements proposed under Alternatives 1, 2, 8, or 9. Given that Alternatives 5, 6, and 7 would accommodate the same passenger loads as all other alternatives, the traffic impacts associated with Alternatives 5, 6, and 7 would be the same as addressed for Alternatives 1, 2, 8, and 9, depending on which set of ground access improvements one of those alternatives is paired with.

# 1. Introduction and Executive Summary

Table 1-24

Summary of Off-Airport Transportation Impacts After Mitigation

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 8	Alt. 9
<b>Impacts Relative to Baseline (2010) Without Alternative Conditions</b>						
Intersections	SU(1)	SU(1)	SU(11)	SU(2)	SU(2)	SU(2)
CMP Facilities - Arterial Monitoring Intersections	LS	LS	SU(1)	LS	LS	LS
CMP Facilities - Freeway Monitoring Stations	LS	LS	LS	LS	LS	LS
CMP Facilities - Transit Demand	LS	LS	LS	LS	LS	LS
<b>Impacts Relative to Future (2025) Conditions</b>						
Intersections	SU(39)	SU(39)	SU(37)	SU(40)	SU(44)	SU(44)
CMP Facilities - Arterial Monitoring Intersections	SU(1)	SU(1)	SU(2)	SU(2)	SU(1)	SU(1)
CMP Facilities - Freeway Monitoring Stations	SU(3)	SU(3)	SU(3)	SU(3)	SU(3)	SU(3)
CMP Facilities - Transit Demand	LS	LS	LS	LS	LS	LS
<b>Construction Impacts<sup>1</sup></b>	SU	SU	SU	SU	SU	SU

Notes:

LS = Less Than Significant Impact  
 SU = Significant Unavoidable Impact

Numbers in parentheses indicate the number of affected intersections/facilities.

<sup>1</sup> The nine alternatives currently being considered for the SPAS project are only at a conceptual level of planning. No construction plans, programs, or schedules have been formulated for any of the alternatives. It would be speculative to estimate construction-related vehicle trip generation and distribution onto the local roadway network in order to evaluate traffic impacts on specific streets and intersections during peak and non-peak traffic periods. As such, the total number of intersections that may be temporarily significantly impacted during construction cannot be determined at this time.

Source: Fehr & Peers, 2012.

When compared to Baseline (2010) Without Alternative conditions, the alternatives would have no significant unavoidable impacts to CMP facilities, with the exception of one CMP arterial monitoring intersection under Alternative 3. When compared to Future (2025) conditions, there would be significant, unavoidable impacts to CMP arterial monitoring intersections and freeway monitoring stations under Alternatives 1, 2, 3, 4, 8, and 9, with the greatest number of impacts under Alternatives 3 and 4. Under all of the alternatives, impacts related to CMP transit demand would be less than significant under both comparison scenarios.

The nine alternatives currently being considered for the SPAS project are only at a conceptual level of planning. No construction plans, programs, or schedules have been formulated for any of the alternatives. As such, it would be speculative to estimate construction-related vehicle trip generation and distribution onto the local roadway network in order to evaluate traffic impacts on specific streets and intersections during peak and non-peak traffic periods. Nevertheless, based on a qualitative evaluation, implementation of any of the SPAS alternatives would result in temporary construction-related traffic impacts on the streets surrounding LAX. These impacts are considered to be significant and unavoidable.

## Energy

### Electricity and Natural Gas

Under all of the SPAS alternatives, the passenger-related building area would increase, as would water use and wastewater generation, compared to baseline conditions, resulting in an increase in electricity and natural gas consumption. In addition, the APM systems associated with Alternatives 3 and 9 would also result in increased electricity demand. The highest electricity and natural gas demand would be associated with Alternative 3, as this alternative includes the greatest amount of new building area as well

as a dual APM system, whereas the lowest demand would occur under Alternative 4. The Los Angeles Department of Water and Power (LADWP) and SoCalGas project sufficient supplies of electricity and natural gas to serve future demand. Moreover, under all of the alternatives, LAWA would implement LAX Master Plan Commitment E-1, Energy Conservation and Efficiency Program, and would comply with its *Sustainability Plan*, which would maximize the energy efficiency of new facilities. For these reasons, under all of the alternatives, impacts associated with electricity and natural gas consumption from the increase in passenger-related building area would be less than significant. As discussed above, LAWA is implementing energy conservation measures in all of its new development. With implementation of LAX Master Plan Commitment E-1, and implementation of energy conservation measures in compliance with the *Sustainability Plan*, Alternatives 1 through 9 would not result in a wasteful, inefficient, or unnecessary consumption of electricity or natural gas.

Cumulative impacts associated with electricity and natural gas consumption as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Transportation-Related Fuel**

Total demand for gasoline, diesel, and alternative fuels (liquefied natural gas, compressed natural gas, and liquefied petroleum gas) would increase under all of the SPAS alternatives compared to baseline conditions. A substantial portion of this increase is associated with greater flight operations and passenger activity in 2025, which would result from projected growth and would occur with or without implementation of the SPAS alternatives. Increased fuel demand would also be associated with construction activities. The highest total fuel demand would be associated with Alternative 3, due to the higher level of construction activity associated with this alternative and greater fuel consumption by aircraft, and the lowest demand would occur under Alternative 4. Petroleum products are market-driven commodities for which adequate supplies are anticipated well beyond 2025. Therefore, impacts associated with increased transportation-related fuel demand under all of the alternatives would be less than significant. As discussed above, the SPAS alternatives with ground access components (i.e., Alternatives 1, 2, 3, 4, 8, and 9) include a variety of design features to shift individuals away from personal vehicle use to other more efficient modes of transportation, which would reduce transportation-related fuel consumption. With these design features, Alternatives 1, 2, 3, 4, 8, and 9 would not result in a wasteful, inefficient, or unnecessary consumption of Jet A fuel, gasoline, or diesel.

Cumulative impacts associated with transportation-related fuel consumption as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Solid Waste**

Improvements associated with the proposed alternatives would not, in themselves, alter passenger-related municipal solid waste generation. Passenger activity at LAX would increase by 2025 due to projected growth with or without implementation of the SPAS alternatives, and those future passenger activity levels would be the same under each of the alternatives. As a result of increased passenger activity levels, passenger-related solid waste generation at LAX would increase by 22 percent compared to baseline (2010) conditions. The increase in solid waste generation would be the same under all alternatives. The Sunshine Canyon Landfill has sufficient physical and permitted capacity to accommodate this increase in solid waste generation. LAWA would continue to implement and enhance existing programs aimed at reducing waste generation, which are designed to fulfill LAX Master Plan Commitment SW-1, Implement an Enhanced Recycling Program, and increase the diversion rate to meet the state's 70 percent requirement by 2020. Therefore, under all alternatives, impacts to solid waste disposal capacity and to diversion-related policies and objectives associated with the solid waste generated from the increased number of passengers would be less than significant.

With respect to cumulative impacts, passenger activity levels at LAX are forecasted to be 78.9 MAP by 2025 as a result of natural growth. The increase in passenger activity is expected to occur with or without implementation of any of the SPAS alternatives. Projected increased passenger demand at LAX, in

## **1. Introduction and Executive Summary**

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conjunction with other regional projects and population growth, would result in cumulative increases to municipal solid waste generation within the Los Angeles region. Although the Sunshine Canyon Landfill has the existing physical and permitted capacity to accept solid waste beyond the SPAS planning horizon, and several landfills are scheduled to remain open during this timeframe, future regional solid waste disposal capacity to meet projected demand in Los Angeles County is not assured. As a result, impacts associated with cumulative increases in municipal solid waste generation would be significant and LAX's contribution to these impacts would be cumulatively considerable.

Cumulative impacts from population growth could be mitigated through implementation of LAX Master Plan Mitigation Measure MM-SW-1, Provide Landfill Capacity. Implementation of this mitigation measure is the responsibility of another agency (or agencies). If this mitigation measure is not fully implemented, cumulative impacts associated with solid waste generation and disposal would remain significant, and LAX's contribution would remain cumulatively considerable.

### **Wastewater Generation**

Under all of the SPAS alternatives, the passenger-related building area would increase compared to baseline conditions, resulting in an increase in wastewater generation. The highest wastewater generation would be associated with Alternative 3, as this alternative includes the greatest amount of new building area, whereas the lowest wastewater generation would occur under Alternative 4. The projected wastewater generation for each alternative could be accommodated by existing wastewater treatment facilities at the Hyperion Treatment Plant. Moreover, trendlines of future flows indicate that sufficient capacity exists to treat projected wastewater flows in 2025, including project-related flows under all of the SPAS alternatives. Under all of the alternatives, LAWA would implement LAX Master Plan Commitment W-2, Enhance Existing Water Conservation Program, and would comply with its *Sustainability Plan and Sustainable Airport Planning, Design and Construction Guidelines*, which would reduce wastewater flows. For these reasons, under all of the alternatives, impacts associated with wastewater generation from the increase in passenger-related building area would be less than significant.

Cumulative impacts related to wastewater generation as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

### **Water Supply**

Under all of the SPAS alternatives, the passenger-related building area would increase compared to baseline conditions, resulting in an increase in water demand. The highest water demand would be associated with Alternative 3, as this alternative includes the greatest amount of new building area, whereas the lowest water demand would occur under Alternative 4.

LADWP projects that there will be adequate water supply to meet City demands through 2035. LADWP projections are based on the 2008 RTP, which, in turn, includes a passenger activity level of 78.9 MAP for LAX. Therefore, LADWP's Urban Water Management Plan (UWMP) projections account for future passenger activity at LAX of 78.9 MAP, the same level associated with the SPAS alternatives. The Water Supply Assessment (WSA) prepared by LADWP for the LAX Master Plan indicates that "adequate water supplies will be available to meet the water demands of the project." Because it was based on the 2001 UWMP, which was based on a projected activity level at LAX of 78.9 MAP, the conclusions of the WSA are still valid. LAWA would continue to implement and enhance water conservation measures at LAX, in fulfillment of LAX Master Plan Commitments W-1, Maximize Use of Reclaimed Water, and W-2, Enhance Existing Water Conservation Program, which would serve to reduce water use under the SPAS alternatives. For these reasons, water demand under all of the alternatives would not exceed regional water supply, and impacts associated with water use from the increase in passenger-related building area would be less than significant.

Cumulative impacts to water supply as a result of the SPAS alternatives in combination with cumulative projects identified in Chapter 5, *Cumulative Impacts*, would be less than significant.

## **Evaluation of Amendments to the LAX Specific Plan**

In conjunction with the physical and operational improvements proposed under each of the nine SPAS alternatives, Chapter 7, *LAX Specific Plan Amendments*, of the SPAS Report identifies administrative amendments to the LAX Specific Plan that might be needed depending on the SPAS Alternative. These administrative amendments would not have any environmental impacts beyond those resulting from the physical improvements that would occur as a result of the SPAS alternatives analyzed in Chapters 4 and 5 of this Draft EIR. Chapter 7, *LAX Specific Plan Amendments*, of the SPAS Report also identifies an amendment to Section 7.H of the LAX Specific Plan that would require LAWA to conduct passenger and airline surveys and studies when LAX reaches 75 MAP, the results of which would help inform LAWA as to potential actions that could be taken to encourage airlines to provide increased domestic passenger service at other airports in the region, particularly those owned or operated by LAWA. The actualization of those actions could result in environmental impacts in the form of reduced operational impacts at LAX and increased impacts at the other affected airports if, and to the extent, there is a shift in aircraft and passenger activity from LAX to other airports. Such operational impacts would include air pollutant emissions, including greenhouse gas emissions, from aircraft and motor vehicles, noise from aircraft and vehicles, surface traffic, and demands on public services and utilities. Detailed evaluation of the exact nature and extent of these shifts in impacts, as well as other environmental impacts, would be speculative at this time, but Chapter 6, *Evaluation of Amendments to the LAX Specific Plan*, provides a programmatic description of the types of impacts that would occur.

## **1.5 Environmentally Superior Alternative**

Section 15126.6(e)(2) of the State CEQA Guidelines requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the "no project" alternative, the EIR must identify an environmentally superior alternative among the other alternatives. Based on the analyses in Chapter 4, *Environmental Impact Analysis*, and Chapter 5, *Cumulative Impacts*, of this EIR, Alternative 2 is considered to be the Environmentally Superior Alternative of the nine alternatives evaluated in detail throughout this document.<sup>21</sup>

As described in more detail in Chapter 2, *Project Description*, Alternative 2 proposes very limited airfield improvements that do not involve any runway relocation or development of a centerfield taxiway. As such, Alternative 2 would require less construction than all of the other alternatives, except for Alternative 4, and would result in reduced/fewer significant construction-related impacts. This would include construction-related air quality impacts (see **Table 1-7** above), construction-related GHG emissions (see Table 4.6-6 in Section 4.6, *Greenhouse Gases*), and construction equipment noise impacts (see **Table 1-23** above). Although the temporary construction-related air quality impacts, GHG emissions, and construction equipment noise impacts of Alternative 4 would be less than those of Alternative 2, the longer-term operations-related air quality, GHG emissions, and noise impacts of Alternative 4 would be greater than those of Alternative 2, as further described below.

Operations-related air quality impacts, particularly from aircraft emissions, which generally constitute the majority of gaseous air pollutants at the airport, would be the lowest under Alternative 2, compared to the other alternatives including Alternative 4, for Visual Flight Rules (VFR) conditions that occur approximately 96 percent of the year (see Table 4.2-13 in Section 4.2, *Air Quality*). This is also the case

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<sup>21</sup> As further described in Chapter 2, *Project Description*, nine alternatives are addressed throughout the EIR, four of which are "fully integrated alternatives" (Alternatives 1 through 4), each of which includes a combination of airfield, terminal, and ground access improvements, and five of which are "focused alternatives," including three alternatives that focus on airfield and associated terminal improvements (Alternatives 5 through 7) and two alternatives that focus on ground access improvements (Alternatives 8 and 9). Selection and implementation of any one of the focused alternatives is assumed to be "paired" with complementary elements of another alternative in order to effectively be an integrated alternative. For example, the airfield/terminal improvements of Alternatives 5 through 7 could be paired with the ground access improvements proposed in Alternatives 1, 2, 8, and 9, and the ground access improvements in Alternatives 8 and 9 could be paired with the airfield/terminal improvements proposed in Alternatives 1, 2, 5, 6, and 7. The comparison of environmental impacts between the nine alternatives and selection of the environmentally superior alternative assumes each of the nine alternatives includes a full complement of airfield, terminal, and ground access improvements.

## **1. Introduction and Executive Summary**

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relative to GHG emissions (see Table 4.6-6 in Section 4.6, *Greenhouse Gases*). Alternative 2 would also have the lowest, or one of the lowest, impacts among all the alternatives relative to human health risk impacts (see Tables 4.7.1-5, 4.7.1-6, 4.7.1-7, and 4.7.1-8 in Section 4.7.1, *Human Health Risk Assessment*).

With respect to biological resources, unlike Alternatives 1, 5, and 6, Alternative 2 would not require modification to the Argo Drainage Channel and would avoid significant impacts to USACOE jurisdictional waters and wetlands and CDFG jurisdictional streambed and associated vegetated riparian habitat associated with those alternatives (see **Table 1-8** above).

All of the alternatives would result in residential units, population, and non-residential noise-sensitive facilities being newly exposed to  $65\geq$  CNEL aircraft noise levels, and none of the alternatives would avoid significant impacts or have substantially fewer impacted residential units, population, and non-residential noise-sensitive facilities than Alternative 2. Implementation of Alternative 2 would, however, result in fewer people and homes being newly exposed to  $65\geq$  CNEL aircraft noise levels than would Alternative 4 (see **Table 1-16** above).

On-airport surface transportation impacts associated with Alternative 2 would be generally similar to those of the other alternatives, with the exception of Alternative 3, which would close the CTA to private vehicles (see **Table 1-5** above). Similarly, the off-airport surface transportation impacts of Alternative 2 relative to baseline (2010) conditions would be comparable to those of most of the other alternatives, with the exception of Alternative 3, which would have a much greater number of significantly impacted intersections than all the other alternatives including Alternative 2 (see **Table 1-5** above). Relative to future (2025) conditions, the number of significantly impacted intersections associated with Alternative 2 would be generally comparable to that of each of the other alternatives, with none of the alternatives avoiding, or representing a substantial reduction in, significant impacts (see **Table 1-5** above).

For the reasons summarized above, in examining the totality of the environmental impacts associated with Alternative 2 compared to the overall environmental impacts of each of the other eight alternatives, Alternative 2 is considered to be the environmentally superior alternative.

## **1.6 Areas of Known Controversy and Issues to be Resolved**

### **1.6.1 Areas of Known Controversy**

#### **Noise**

Concern has been expressed regarding the potential for noise impacts to residential and other sensitive receptors in the vicinity of LAX as a result of relocated runways proposed under various SPAS alternatives. A detailed analysis of potential noise impacts was conducted as part of this EIR. The analysis evaluated potential noise impacts due to aircraft operations, road traffic, dedicated busway/APM operation, and construction traffic and equipment. Results of this analysis are presented in Section 4.10, *Noise*, and are also considered in Section 4.9, *Land Use and Planning*, relative to land use compatibility.

#### **Surface Transportation**

Concerns have been expressed regarding potential project and cumulative impacts on the roadway system in the vicinity of LAX. Such concerns include increases in airport-related traffic associated with future growth in activity at LAX and potential shifts in local traffic patterns resulting from the development of new ground transportation facilities at LAX. A related concern pertains to the ability of the LAX ground transportation system to tie into the Metro transit system improvements proposed in the vicinity of LAX. Detailed analyses of on-airport and off-airport traffic impacts were completed for the SPAS alternatives. The results of the analyses are presented in Section 4.12, *Transportation*.

### **Air Quality**

Concern has been raised regarding potential air quality impacts on nearby communities, particularly as related to alternatives that propose runway relocations closer to communities. Potential impacts associated with increased criteria and toxic air emissions are addressed in Sections 4.2, *Air Quality*, and 4.7.1, *Human Health Risk Assessment*, respectively.

Additional details related to Areas of Known Controversy are provided in the comment letters on the SPAS NOP contained in Appendix A, *Notice of Preparation/Scoping*.

### **1.6.2 Issues to be Resolved**

#### **Choice Among Alternatives**

The proposed project is the LAX SPAS, which involves the identification and evaluation of potential alternative designs, technologies, and configurations for the LAX Master Plan Program that would provide solutions to the problems that the Yellow Light Projects were designed to address, as well as the identification and evaluation of potential amendments to the LAX Specific Plan. This Draft EIR will be circulated for agency and public review and comment and, in accordance with CEQA, LAWA will prepare written responses to all comments received and will prepare the Final EIR. The BOAC will consider the various alternatives evaluated in the EIR and whether or how to mitigate the significant impacts.

## **1.7 Incorporation by Reference**

Portions of this EIR incorporate by reference information from other documents that are available to the public. In such cases, the document being incorporated by reference is identified by name and the information from that document is summarized in the relevant SPAS EIR discussion. In particular, portions of the following documents were incorporated by reference in the SPAS EIR:

- ◆ LAX Master Plan Final EIR (December 2004);<sup>22</sup> and
- ◆ LAX Master Plan Alternative D Mitigation Monitoring and Reporting Program (MMRP) (September 2004).<sup>23</sup>

All of the documents listed above are available for public review at Los Angeles World Airports, Facilities Planning Division, One World Way, Los Angeles, CA 90045, and are also accessible via the internet at [www.ourlax.org](http://www.ourlax.org).

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<sup>22</sup> City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, April 2004.

<sup>23</sup> City of Los Angeles, Los Angeles World Airports, Alternative D Mitigation Monitoring and Reporting Program, September 2004.

## ***1. Introduction and Executive Summary***

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