Draft Environmental Impact Report
(Draft EIR)

[State Clearinghouse No. 2016081034]

for

Los Angeles International Airport (LAX)
Terminals 2 and 3 Modernization Project

City of Los Angeles
Los Angeles City Clerk Case #EIR-17-002-AD

February 2017

Volume 1
Main Document and Appendix A

Table of Contents

List of Appendices

List of Tables

List of Figures

This page left intentionally blank

1. INTRODUCTION AND EXECUTIVE SUMMARY

This document is a Draft Environmental Impact Report (EIR) for the Terminals 2 and 3 (T2/T3) Modernization Project at Los Angeles International Airport (LAX). LAX is owned and operated by the City of Los Angeles, whose Board of Airport Commissioners oversees the policy, management, operation, and regulation of LAX. Los Angeles World Airports (LAWA) is a proprietary department of the City of Los Angeles charged with administering the day-to-day operations of LAX. This Draft EIR has been prepared by LAWA as the lead agency in conformance with the California Environmental Quality Act (CEQA - Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.).

A Notice of Preparation and Initial Study, included as Appendix A of this Draft EIR, was circulated for public review from August 11, 2016 to September 9, 2016. During the public review period, LAWA held a public Scoping Meeting on August 24, 2016, at Los Angeles Fire Station #5 at 8900 South Emerson Avenue. The meeting was staffed by LAWA and consultants on the proposed project, and was organized in an open house format, with information on the proposed project and the CEQA process available and on display. The primary purpose of the meeting was to receive public comments regarding the scope and content of the environmental information to be included in the Draft EIR.

The Initial Study identified the resource areas that could be subject to significant impacts from the proposed project. Based on the analysis in the Initial Study, LAWA determined that the proposed project would have the potential to result in potentially significant construction-related air quality and associated human health risk, cultural resources (archaeological resources, paleontological resources, tribal cultural resources, and human remains), greenhouse gas (GHG) emissions, and surface transportation impacts, as well as operational energy-related air quality and GHG emissions, and potentially having impacts discussed in the Mandatory Findings of Significance (cumulative impacts and substantial adverse impacts on human beings from construction-related air quality, GHG emissions, and surface transportation impacts, and operational energy-related air quality and GHG emissions). As a result, these resources are evaluated further in this Draft EIR.

LAWA determined that impacts related to aesthetics, agriculture and forestry resources, air quality (aircraft and transportation operations and odor), biological resources, cultural resources (historic resources), geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic (operations), and utilities and service systems would be less than significant through the analysis in the Initial Study; therefore, these topics are not analyzed further in this Draft EIR (see Appendix A). Federal, state, regional, and local agencies, as well as the public, were afforded the opportunity to comment on the findings of the Initial Study through the 30-day scoping period associated with circulation of the Notice of Preparation for this Draft EIR.

1.1 Project Objectives

LAWA proposes improvements to existing T2 and T3 at LAX. The underlying purposes of improvements to the facilities at T2 and T3 are to provide improved security, passenger experience, operations, convenience, and quality of service. The specific objectives of the proposed project are to:

- Meet Transportation Security Administration (TSA) and U.S. Customs and Border Protection (CBP) requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security;
- Modernize and revitalize existing T2 and T3 in order to improve passenger level of service and amenities within the terminals and improve building systems, as has been previously done for other terminals within the CTA;
- Coordinate improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3 to be compatible with proposed changes to the T2 and T3 buildings and anticipated airline fleets and uses;

- Enhance the interior and exterior of the terminals to benefit the overall appearance of the CTA;
- Provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once; and
- Provide for improvements within each terminal (T2 and T3) that are common to the functions and operations of both terminals and therefore can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service by reducing redundancies in passenger and baggage processing by providing facilities that support multiple terminals, when feasible.

1.2 Summary of Proposed Project

The proposed project includes:

- Upgrading the T2 concourse, including construction of additional floor area;
- Demolition and reconstruction of the T3 concourse building to provide additional concourse area, including a new operation control center; the demolition of the southern appendages of the T3 satellite;
- Reconfiguring existing passenger gate positions within the existing terminal linear frontage for a total of 27 passenger gate positions at T2/T3;
- Demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings – T2.5 and T3.5) associated with T2 and T3, including new facilities for passenger and baggage screening, ticketing, and baggage claim (which will reduce redundancies in passenger and baggage processing by providing facilities that support multiple terminals); and a secure connector (i.e., an enclosed/controlled passenger corridor) between T2 and T3; and
- Apron improvements, specifically the replacement/resurfacing, restriping, and relocation of fuel pits.

In total, approximately 832,000 square feet of new building space would be added to the two terminals, for a total square footage of approximately 1,620,010 square feet.

The proposed project would be completed in stages and take approximately 76 months (six years and four months) to construct. Construction could commence as early as fourth quarter 2017 and is projected to end in late-2023.

In addition, as discussed in Section III.a-d of the Initial Study (included in Appendix A of this EIR), implementation of the proposed project would not result in a change to air traffic procedures for airspace route and runway assignment or routing of aircraft between the runways and their parking position. Federal Aviation Administration air traffic control would continue to allocate runway assignment in order to balance runway use and maximize the efficiency of the airport. For additional details regarding operations, refer to Section 2.6 in Chapter 2, *Project Description*.

1.3 Purpose of this EIR

Since the Initial Study determined that the proposed project may have a significant effect on the environment, CEQA requires the preparation of this Draft EIR. LAWA has undertaken this Draft EIR for the following purposes:

- To evaluate the potentially significant environmental effects associated with the implementation of the proposed project, as required by CEQA;
- To indicate the manner in which those significant impacts can be avoided or significantly lessened;
- To identify any significant and unavoidable adverse impacts that cannot be mitigated;
- To identify reasonable and feasible alternatives to the proposed project that would attain most of the project objectives or eliminate any significant adverse environmental impacts or substantially lessen any of the significant effects;

- To inform the general public, the local community, and responsible trustee, State, and federal agencies of the nature of the proposed project, its potentially significant environmental effects, feasible mitigation measures to mitigate those effects, and reasonable and feasible alternatives;
- To enable LAWA decision-makers to consider the environmental consequences of the proposed project and make findings regarding each significant effect that is identified; and
- To facilitate any responsible agencies in issuing permits and approvals for the proposed project.

LAWA must certify the EIR before approving the proposed project. Upon certification, LAWA, as well as any responsible agencies, will then use the EIR to decide whether to approve and implement the proposed project. Other agencies may also use this EIR in their review and approval processes.

This Draft EIR was prepared in accordance with Section 15151 of the State CEQA Guidelines, which defines the standards for EIR adequacy as follows:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and good faith effort at full disclosure.

1.4 Organization of this EIR

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

Chapter 1 – Introduction and Executive Summary

This chapter provides a summary of the proposed project, CEQA compliance requirements, an overview of the report organization, and a discussion of areas of known controversy and issues to be resolved. Also included is a summary of the environmental analysis and identification of the environmentally superior alternative.

Chapter 2 – Project Description

This chapter presents the location of the proposed project, the objectives of the proposed project, and a description of the components and construction schedule of the proposed project. In addition, Chapter 2 identifies the intended use of the EIR and the approvals required for implementation of the proposed project.

Chapter 3 – Overview of Project Setting

This chapter provides an overview of the existing environmental setting related to the proposed project area, and the topical issues evaluated in Chapter 4, *Environmental Impacts Analysis*, of this EIR. This chapter also describes other projects proposed in the nearby area that may, in conjunction with the proposed project, result in cumulative impacts on that existing setting.

Chapter 4 – Environmental Impact Analysis

The introductory section of Chapter 4 describes the analytical framework for the environmental review of the proposed project. The remaining sections of the chapter provide detailed analysis of the potential construction-related environmental impacts of the proposed project on air quality (including human health risk and energy from operations), cultural resources (archaeological resources, paleontological resources, tribal cultural resources, and human remains), GHG emissions (including energy from operations), and surface transportation.

Chapter 5 – Alternatives

This chapter provides a description and evaluation of project alternatives that could feasibly attain most of the basic objectives of the proposed project while avoiding or substantially reducing any of the significant effects of the proposed project identified in Chapter 4, *Environmental Impact Analysis*, in this EIR. This chapter also identifies alternatives that were considered but rejected from further consideration, and explains why they were rejected.

Chapter 6 – Other Environmental Considerations

This chapter includes a discussion of issues required by CEQA that are not covered in Chapter 4. This includes growth-inducing impacts, irreversible environmental changes, and identification of unavoidable significant impacts (i.e., impacts that cannot be mitigated to a level less than significant) that would be caused by the proposed project, as well as the impacts of the proposed project determined to be less than significant with mitigation, and less than significant. This chapter also includes information about the proposed project's energy consumption and energy efficiency measures. In addition, Chapter 6 includes a summary of the topics evaluated in the Initial Study but not carried forward for further evaluation in this Draft EIR (impacts found not to be significant).

Chapter 7 – List of Preparers, Parties to Whom Sent, List of References, Notice of Preparation and Scoping Meeting Comments, and List of Acronyms

This chapter provides the following: a list of the individuals from LAWA and contractors that performed key roles in the preparation and development of this Draft EIR; a list of the parties to whom copies of this Draft EIR were sent for review or to whom notice of the availability of this Draft EIR was sent; a list containing the bibliography of documents used in the preparation of this EIR; a list of agencies, organizations and individuals who provided comments on the Notice of Preparation/Initial Study and at the public scoping meeting; and a list of acronyms used in this Draft EIR.

All documents listed in the Section 7.3, List of References, of Chapter 7 are available for public inspection at the following location:

Los Angeles World Airports
One World Way, Room 218
Los Angeles, CA 90045

Detailed construction emission calculation spreadsheets and modeling input and output files associated with the LAX T2/T3 Modernization Project Draft EIR construction air quality analysis are voluminous and technical in nature and are therefore not provided in their entirety in hard-copy form in Appendix B of this Draft EIR. These air quality data files are available for review, as electronic files, at the above address.

Appendices

The appendices present data supporting the analysis contained in the Draft EIR. The appendices in this Draft EIR include:

Appendix A – Notice of Preparation, Initial Study and Distribution List, Scoping Meeting Materials, Notice of Preparation and Scoping Meeting Comments
Appendix B – Air Quality, Human Health Risk Assessment, and Greenhouse Gas Emissions
Appendix C – Archaeological and Paleontological Resources Assessment For The Proposed Landside Transportation Program at Los Angeles International Airport; City of Los Angeles, California
Appendix D – Construction Surface Transportation
Appendix E – Energy Conservation

1.5 Airport Terminology

Following are definitions for airport terminology used throughout this EIR:

Aircraft Parking Limit Line - A line established by the FAA beyond which no part of a parked aircraft may protrude.

Airside - Areas of the airport that are restricted with access only to authorized personnel and ticketed passengers that have undergone security screening; airside areas include passenger handling facilities, runways, taxiways, apron areas, and airport service roads.

Apron – Areas where aircraft are parked, unloaded or loaded, refueled, or boarded. Also called the "ramp".

Central Terminal Area (CTA) - The main passenger accessible features of the airport that consists of terminals and parking facilities/structures encircled by a roadway system.

Concessions – Food/beverage, retail, and other passenger service businesses.

Concourse - The portion of the terminal closest to the airfield, which consists of passenger holdrooms, concessions, and operations support.

Federal Inspection Services (FIS) Facility – A station for the processing (i.e., screening/inspection) international air commerce passengers, crew, their baggage and effects arriving from, or departing to, foreign countries.

Holdrooms – Passenger seating/waiting areas within a concourse.

Landside - Areas of the airport that are accessible to the public and include roadway networks, parking lots, rental car operations, and public transportation facilities.

Operation Control Center – A facility at the top of a concourse used by airport staff to coordinate aircraft arrivals at, and push-back from, the individual gates on concourses and coordinate aircraft movements on the alleyways adjacent to the concourses. An operation control center works in conjunction with the FAA's airport traffic control tower (ATCT) in managing the movement of aircraft on the airfield.

Satellite –The oval building at the end of the existing LAX Terminal 3 concourse.

Secure Connector - An enclosed/controlled passenger corridor.

Secured Area - An area within a terminal building to which access is controlled by the inspection of persons and property under federal law.

Terminal - Building at an airport where passengers transfer between ground transportation and the facilities that allow them to board and disembark from aircraft. Terminals at LAX include a ticketing building and a concourse.

Ticketing Building – The portion of the terminal closest to the CTA roadway (World Way), consisting of functions such as ticketing/passenger check-in, passenger security screening, checked-bag screening, baggage claim, and operations support.

1.6 Executive Summary of Environmental Impacts

Table 1-1 summarizes the environmental impacts from construction-related activities of the proposed project to air quality (including human health risks and energy from operations), cultural resources (archaeological resources, paleontological resources, tribal cultural resources, and human remains), GHG emissions (including energy from operations), and surface transportation as identified in Chapter 4, *Environmental Impacts Analysis*, of this EIR. It also summarizes the energy impacts discussed in Chapter 6, *Other Environmental Considerations.* In accordance with the requirements of the State CEQA Guidelines, and as further described in Chapter 6, impacts on all other environmental topics addressed in the Initial Study, including aesthetics, agriculture and forestry resources, air quality (odor), biological resources, cultural resources (historic resources), geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation/traffic (operations), and utilities and

service systems, were determined to be less than significant in the Initial Study prepared for the proposed project. The Notice of Preparation/Initial Study is included as Appendix A of this EIR.

1.7 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. As further described in Chapter 5, *Alternatives*, the alternatives to the proposed project evaluated in detail in the Draft EIR are:

- **Alternative 1: No Project – No Build:** Under Alternative 1, none of the proposed improvements under the proposed project would occur. The project site would retain the existing physical conditions and the existing terminals would continue to operate as they do today, with future projected passenger growth occurring. The project site is currently developed with approximately 788,018 square feet of existing structures (not including the apron area) which would remain. Further, under Alternative 1, no new infrastructure or other site improvements at T2 and T3 would occur.
- **Alternative 2: No Project – Limited Interior Improvements Only:** Under Alternative 2, the airline terminal operations would continue and T2 and T3 would undergo improvements reasonably expected to occur in the foreseeable future if the proposed project is not approved. Such improvements could include updating the interior infrastructure (i.e., minor amounts of interior and building system renovations) and tenant improvements (i.e., signage, wiring for technology, modifications to layout of holding areas, etc.), all within the existing building footprints. To the extent that remodeling of interior spaces could occur to accommodate changes in security requirements, this would be expected to occur under this alternative. The amount of square footage at the project site would remain at 788,018 square feet (not including the apron area).
- **Alternative 3: Reduced-Scale Project:** Under Alternative 3, only certain elements of the proposed project would be implemented, resulting in a reduced-scale project. In particular, Alternative 3 would modernize T3, including updates to the interior and exterior of the terminal, the building systems, and some enhancements to amenities and operations within the terminal; however, only very limited improvements would be made at T2. The following elements that are included in the proposed project would be implemented under Alternative 3:
  - The T3 existing ticketing building would be completely demolished and rebuilt. The new ticketing building would be constructed in the existing area of the T3 ticketing building, and would extend towards the Tom Bradley International Terminal (TBIT) in the paved open area to the southwest of T3. Additionally, the eastern portion of the existing T3 ticketing building would be extended into the western portion of the T2 existing ticketing building.
  - The T3 existing concourse building would be completely demolished and rebuilt. The southern appendages to the T3 satellite would be demolished. The new T3 concourse would be wider than the existing concourse.
  - The Security Screening Checkpoint at T3 would be reconfigured in the new space created by reconstructing the ticketing building and concourse.
  - A Secure T2/T3 Connector would be built to connect the concourses; however, the design of this connector under Alternative 3 would eliminate the office level at the T2 ticketing building.
  - The T2 FIS would be renovated (interior renovation only).

As the Alternative 3 elements focus primarily on T3 (the oldest of the two terminals), as well as providing security and customs screening to improve safety and security, the elements that are included in the proposed project but would not be implemented under Alternative 3 are as follows:

- Demolishing and rebuilding the T2 ticketing building (and the associated additional square footage)
- T2 apron work and passenger boarding bridges

- T3 Control Center
- Consolidated Checked Baggage Inspection Systems (CBIS) for T2 and T3
- Consolidated SSCP for T2 and T3

Based on the analysis in Chapter 4, *Environmental Impact Analysis*, and Chapter 5, *Alternatives*, the 'No Project – No Build Alternative' (Alternative 1) is considered to be the environmentally superior alternative as it would avoid all construction and operation impacts of the proposed project. However, the No Project – No Build Alternative would not meet any of the objectives of the proposed project, which are identified in Section 1.1, Project Objectives, above, and in Chapter 2, *Project Description*. Additionally, Alternative 2: No Project – Limited Interior Improvements would be environmentally superior to the proposed project through the reduction in construction-related air quality and surface transportation impacts, as further described in Chapter 5, *Alternatives*.

Although Alternative 2: No Project – Limited Interior Improvements Only would result in slightly greater environmental impacts compared to Alternative 1 because it would include some construction activities, it would also avoid significant and unavoidable impacts associated with air quality and avoid making a cumulatively considerable construction-related traffic impact, as well as lessen the impacts to GHG emissions, human health risk, cultural resources, and operational energy (associated with air quality and GHG). However, because Alternative 2 would have limited construction and reduced building space, energy impacts would be less than the proposed project. Because of the limited amount of modernization that could occur under Alternative 2, the terminals would not comply with current state water and energy efficiency standards and regulations; therefore, energy conservation would be less when compared to the proposed project. As only limited interior improvements would occur,

Alternative 2 would not result in improvements to safety and security to meet long-term TSA and CBP security and customs screening (such as space enough to provide next generation passenger and baggage security screening functions), nor the modernization of T2 and T3 and no improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations). Minimal improvements in level of service, amenities, and building systems would not be sufficient to significantly upgrade the building and building systems. In addition, no exterior improvements would occur, and no benefit to the overall appearance of the CTA would occur. Finally, under Alternative 2 there would be no opportunity to provide a secure connector between T2 and T3 nor would there be the opportunity for shared functions between the two terminals. Therefore, Alternative 2 would not meet the project objectives.

In accordance with the State CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project alternative, Alternative 3 – Reduced-Scale Project has been identified as the environmentally superior alternative. Due to the reduced project size and shorter construction period, compared to the proposed project, Alternative 3 would result in a reduction in overall duration of construction-related air pollutant emissions, although daily peak NOx emissions would still be significant and unavoidable, and reduced construction-related impacts to human health risks, GHG emissions, cultural resources, construction surface transportation, and operational energy (associated with air quality and GHG). There would still be a cumulatively considerable construction-related traffic impact. Alternative 3 would involve less construction and less building space than the proposed project; therefore, energy impacts would be less than the proposed project. Alternative 3 would also involve less modernization; therefore, energy conservation would be less when compared to the proposed project.

It is important to note, while Alternative 3 is considered the environmentally superior alternative, it would only lessen the significant impacts of the proposed project, but would not avoid the significant unavoidable impact that would occur under the proposed project with respect to construction-related regional NO_X emissions and with respect to making a cumulatively considerable traffic impact. Thus, the environmentally superior Alternative 3 would not eliminate any significant and unavoidable impacts.

While Alternative 3: Reduced-Scale Project is considered the environmentally superior alternative, it would not fully meet five of the six project objectives. It would meet the objective to provide a secure connector between T2 and T3. It would partially meet the objective to provide for TSA and CBP requirements for security and customs screening and increase the amount of flexible space for next generation passenger and baggage security

screening functions, as it would provide 45,000 square feet of SSCP/Office space for security in T3, as is also the case for the proposed project; however, the amount of SSCP/Office area for security in T2 would be over 70 percent less under Alternative 3 than it would be under the proposed project and the amount of FIS area in T2 would be approximately 13 percent less under Alternative 3. Only improvements to the aircraft apron area (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T3 would occur, with no such improvements at T2. Although Alternative 3 would enhance the interior and exterior of T3, it would only partially meet the objective to enhance the interior and exterior of the terminals to the benefit of the overall appearance of the CTA as the exterior of T2 would remain unimproved. It would not meet the objective to provide improvements and functions that can be shared between terminal to improve the operational efficiency and flexibility, as well as enhance customer service.

Therefore, although the Reduced-Scale Project Alternative is the environmentally superior alternative, it would not avoid or substantially lessen the significant cumulative traffic impact. Furthermore, the Reduced-Scale Project Alternative would not fully meet most of the objectives of the proposed project, including fully satisfying TSA and CBP security requirements, modernizing T2 and T3 and associated apron area while improving the level of service and amenities, and improving building systems, as has been previously done for other terminals within the CTA.

1.8 Areas of Known Controversy and Issues to be Resolved

Several letters were received during the public circulation period for the Initial Study/Notice of Preparation prepared for this EIR and comments were also received at the public scoping meeting held on August 24, 2016. The primary environmental concerns associated with the proposed project that were raised are summarized below. The Notice of Preparation comments are included in Appendix A of this EIR**.**

Air Quality

General issues were raised regarding potential air quality impacts on nearby communities and sensitive receptors related to construction of the proposed project as well as cumulative effects. Potential impacts associated with air quality due to construction of the proposed project are addressed in Section 4.1, *Air Quality and Human Health Risk.*

Transportation/Traffic

Issues were raised regarding the proposed project and its potential to result in individual or cumulative traffic impacts on the off-airport circulation system during construction activities. Potential impacts associated with construction traffic are analyzed in Section 4.4, *Construction Surface Transportation*.

Table 1-1
Summary of Environmental Impacts Related to the Proposed Project

Resource Category	Impact Before Mitigation	Proposed Mitigation Measures/Standard Control Measures	Level of Significance After Mitigation
Air Quality and Human Health Risk			
Air Quality - Construction	Significant	LAX-AQ-1. Construction-Related Air Quality Control Measures and MM-AQ (T2/T3)-1 – Preferential Use of Renewable Diesel Fuel.	Regional emissions of NOx - Significant and Unavoidable Local emissions of NO_2 – Less Than Significant
Air Quality - Cumulative Construction	Significant	LAX-AQ-1 and MM-AQ (T2/T3)-1	Significant and Unavoidable (NOx)
Human Health Risk Assessment - Construction	Less Than Significant	None Required However, further reduced with implementation of LAX-AQ-1 and MM-AQ (T2/T3)-1	Less Than Significant
Human Health Risk Assessment - Cumulative Construction	Less Than Significant	None Required However, further reduced with implementation of LAX-AQ-1 and MM-AQ (T2/T3)-1	Less Than Significant
Air Quality – Operations (energy usage)	Less Than Significant	None Required	Less Than Significant
Cultural Resources			
Archaeological Resources	Potentially Significant	LAX-AR-1. Conformance with LAWA's Archaeological Treatment Plan and LAX-AR-2. Archaeological Resources Construction Personnel Briefing	Less Than Significant
Paleontological Resources	Potentially Significant	LAX-PR-1. Conformance with LAWA's Paleontological Management Treatment Plan and LAX-PR-2. Paleontological Resources Construction Personnel Briefing	Less Than Significant
Tribal Cultural Resources	Less Than Significant	None Required However, further reduced with implementation of LAX-AR-1 and LAX-AR-2	Less Than Significant
Human Remains	Less Than Significant	None Required	Less Than Significant

Table 1-1
Summary of Environmental Impacts Related to the Proposed Project

Resource Category	Impact Before Mitigation	Proposed Mitigation Measures/Standard Control Measures	Level of Significance After Mitigation
Greenhouse Gas Emissions			
Construction	Less Than Significant	None Required However, further reduced with implementation of Air Quality measures LAX-AQ-1 and MM-AQ (T2/T3)-1	Less Than Significant
Operation (energy usage)	Less Than Significant	None Required	Less Than Significant
Construction Surface Transportation			
Construction	Less Than Significant	None Required However, further reduced with implementation of LAX-ST-1. Construction Traffic Management Plan	Less Than Significant
Cumulative Construction	Significant (Intersections #5 and #14)	LAX-ST-1; No additional feasible mitigation is available	Significant and Unavoidable (Intersections #5 and #14)
Energy Impacts And Conservation (Construction and Operation)			
Wasteful, Inefficient or Unnecessary Consumption	Less Than Significant	None Required However, further reduced during construction with implementation of LAX-AQ-1 and MM-AQ (T2/T3)-1	Less Than Significant
Reliance on Fossil Fuels	Less Than Significant	None Required However, further reduced during construction with implementation of LAX-AQ-1 and MM-AQ (T2/T3)-1	Less Than Significant
Source: CDM Smith, 2016			

2. PROJECT DESCRIPTION

The project description is intended, among other things, to serve as a general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and the supporting public services facilities. (State CEQA Guidelines Section 15124(c)). The proposed project's technical and engineering characteristics are detailed below in Section 2.4, Project Characteristics. The objectives, purpose, and economic characteristics of the proposed project are detailed in Section 2.3, Project Objectives, below.

The environmental and engineering characteristics of the proposed project specific to each environmental resource analyzed within this Draft EIR are further detailed in the individual subsections (i.e., Sections 4.1 to 4.4) of Chapter 4 *Environmental Impact Analysis*. Supporting public services facilities associated with the proposed project are discussed in Appendix A.1: Notice of Preparation/Initial Study.

2.1 Project Overview

The Los Angeles World Airports (LAWA) proposes improvements to existing Terminals 2 and 3 (T2 and T3) at Los Angeles International Airport (LAX). The proposed project is referred to as the LAX Terminals 2 and 3 Modernization Project (LAX T2/T3 Modernization Project).

T2 was originally constructed in 1961 but was demolished and completely reconstructed in place in 1988.[1] T3 was constructed in 1961 as part of the original development of the Central Terminal Area (CTA). The original T3 1961 'satellite' (the oval building at the end of the existing concourse) was modified around 1970 to accommodate wide-bodied aircraft, and the other portions of T3 were completed in several stages between 1980 and 1987 (which included a new passenger connector and baggage system linked to the existing satellite).[2] There has been no substantial exterior modernization or addition of building space at T2 or T3 since the late 1980s and the terminal spaces are not on par with the other terminals in the CTA. In addition, the building systems (including heating, ventilation, and air conditioning [HVAC] systems, plumbing, electrical, and passenger boarding bridges [PBBs] and their support systems) associated with T2 and T3 have not be significantly upgraded, are inefficient, and are at or beyond their useful lives.

The main purpose of the proposed project is to modernize existing T2 and T3 in order to improve passenger level of service and amenities within the terminals; help meet federal security requirements (e.g., security screening); improve passenger and baggage processing and inspections; improve building systems; improve the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3; modernize the interior and exterior of the terminals to benefit the overall appearance of the CTA; and improve efficiency by building facilities that can be shared between T2 and T3 (such as passenger and baggage processing).

As described further in Section 2.4 below, the proposed project includes reconfiguring existing passenger gate positions within the existing terminal linear frontage; upgrading the T2 concourse, including construction of additional floor area; the demolition and reconstruction of the T3 concourse building to provide additional concourse area, including a new operation control center; the demolition of the southern appendages of the T3 satellite; the demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings – T2.5 and T3.5) associated with T2 and T3, including new facilities for passenger and baggage screening, ticketing, and baggage claim; and a secure connector (i.e., an

1 Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016, included within Appendix A of this Draft EIR.

2 Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016, included within Appendix A of this Draft EIR.

enclosed/controlled passenger corridor) between T2 and T3. In total, approximately 832,000 square feet of new building space would be added to the two terminals, for a total square footage of approximately 1,620,010 square feet. The proposed project also includes apron improvements, specifically replacement/resurfacing of apron areas and restriping of aircraft parking positions, and the relocation of aircraft fuel hydrant pits.

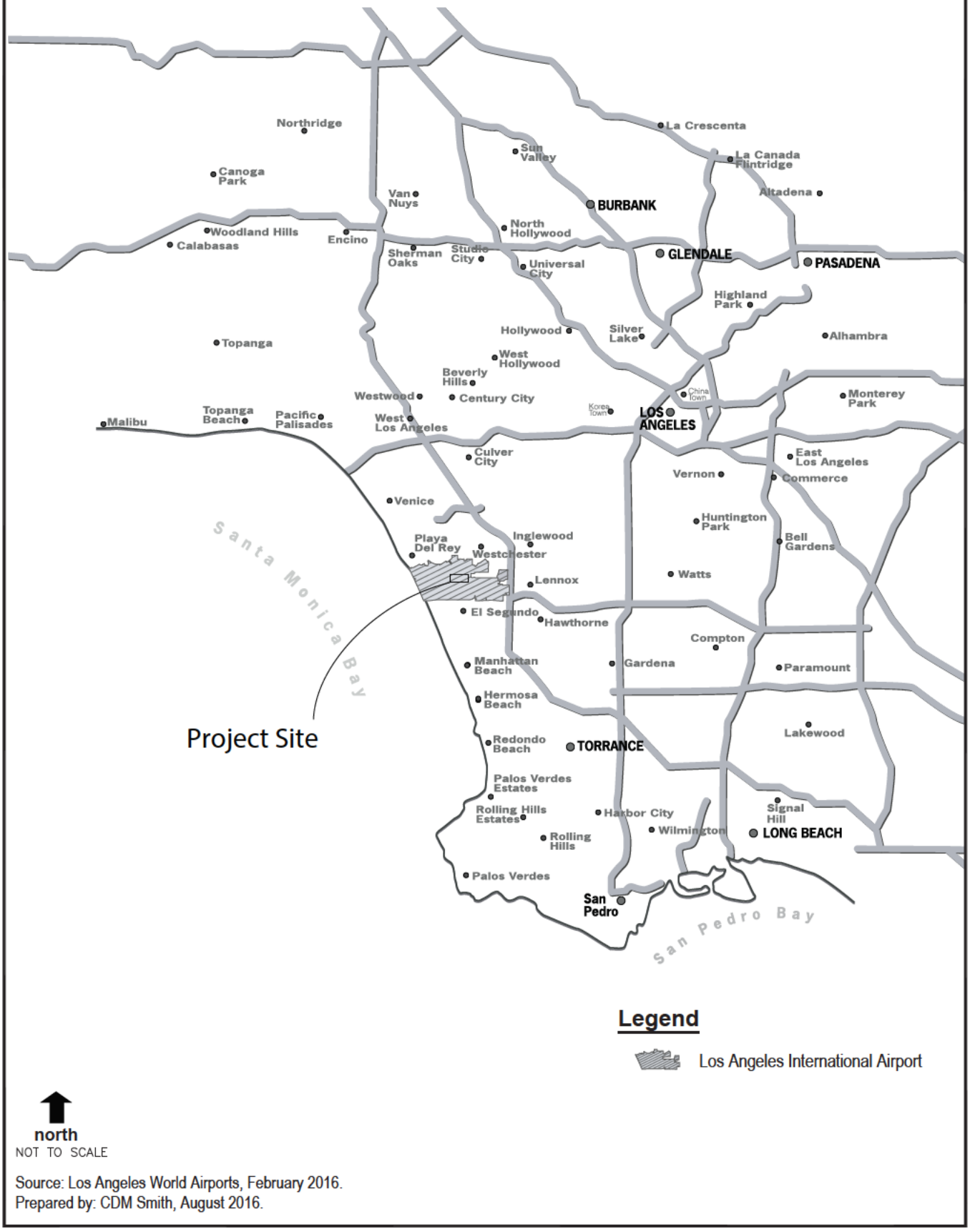
The proposed project would be completed in stages and take approximately 76 months (six years and four months) to construct and is estimated to begin fourth quarter 2017.

The operation of the proposed project would provide improved safety and security, passenger experience, convenience, quality of service, and building efficiency through renovations of aging terminal facilities. The improvements would allow for the reconfiguring of the passenger gate positions and aircraft-parking layout around T2 and T3 to match aircraft fleet requirements, which could result in there being additional passenger gate positions (increasing the total gates at T2 and T3 from 24 to 27 passenger gate positions); however, the proposed project would not increase the linear frontage that is currently available to accommodate aircraft parking (see Section 2.6 below for additional discussion) and thus would not cause or facilitate an increase in passenger capacity.

2.2 Project Location

The project site is located at LAX, within the City of Los Angeles and Los Angeles County (see **Figure 2-1**). LAX is the primary airport for the greater Los Angeles area, encompassing approximately 3,800 acres, and is situated at the western edge of the City of Los Angeles. In the LAX vicinity, the communities of Westchester and Playa del Rey are located to the north, the City of El Segundo is to the south, the City of Inglewood and the unincorporated Los Angeles County community of Lennox are to the east, the unincorporated Los Angeles County community of Del Aire and the City of Hawthorne are located to the southeast, and Dockweiler State Beach and the Pacific Ocean are to the west. Regional access to LAX is provided by Interstate 105 (I-105), which runs east-west and is located adjacent to LAX on the south, and the San Diego Freeway (Interstate 405 or I-405), which runs north-south and is located east of LAX. The main arterial streets serving LAX include Sepulveda Boulevard, Century Boulevard, Imperial Highway and Lincoln Boulevard.

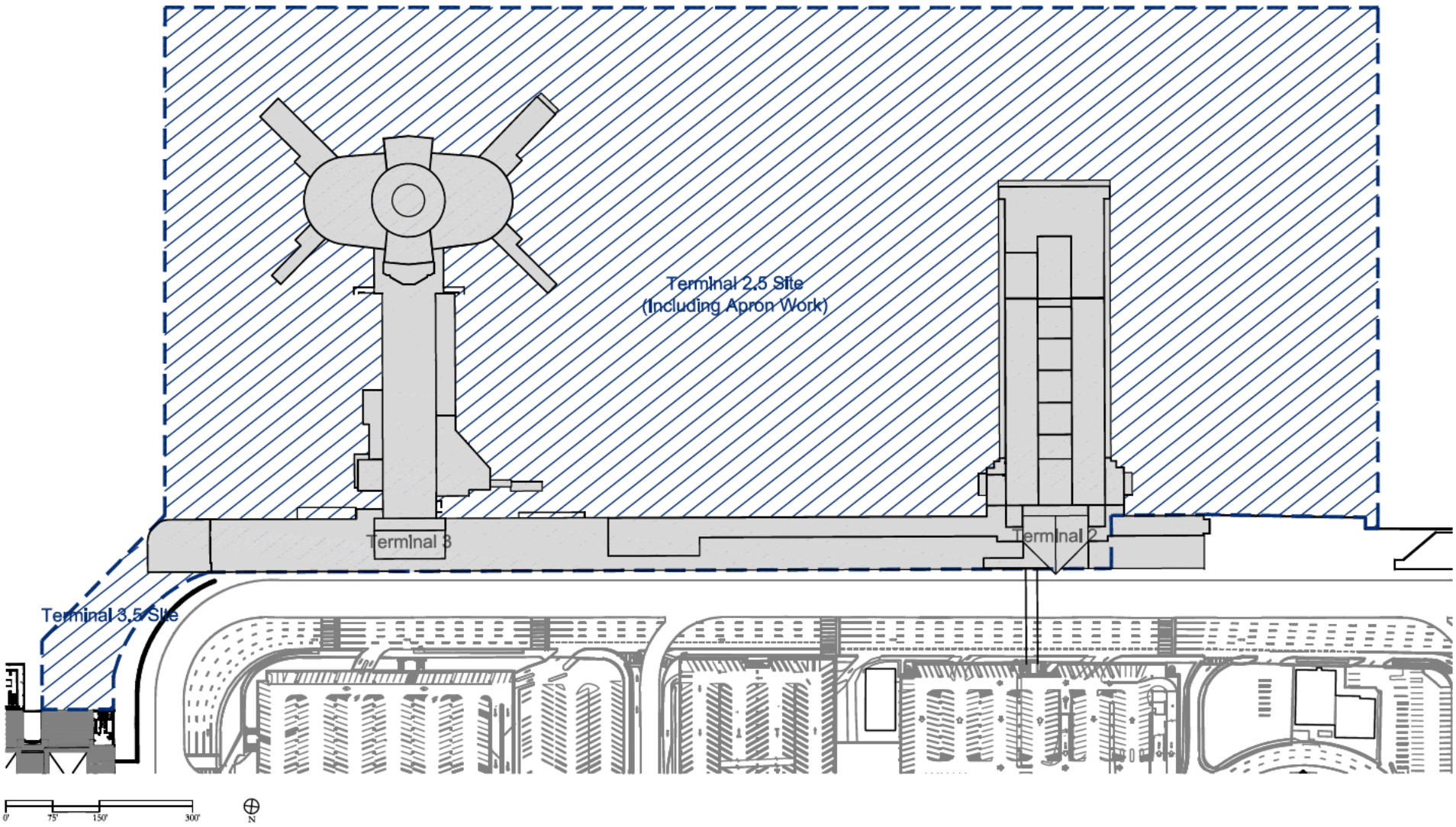
The project site is located within the CTA of LAX. The CTA is arranged similar to a “campus” in that there is an internal collection of buildings (i.e., terminals and parking structures) and roadways (both upper and lower) that are in a U-shaped area. Within the CTA, there are nine passenger terminals with the upper-level associated with departures and the lower level for arrivals. As shown in **Figure 2-2**, the approximately 41-acre project site is in the northern portion of the CTA, north of World Way and approximately 2,200 feet west of Sepulveda Boulevard, 8,000 feet east of Pershing Drive, 2,600 feet south of Westchester Parkway, and 5,000 feet north of Imperial Highway. The project site consists of existing T2 and T3 including the concourse buildings, and accompanying ticketing building. The project site also includes a paved open area to the southwest of T3, where a new ticketing building (i.e., Terminal 3.5, as described below) is proposed to be constructed. The northern (airside) area associated with the project site is bound by a common airside access system comprised of Taxilane D and a vehicle service road to the north. Because the proposed project includes airside apron improvements, as shown in **Figure 2-3**, the project site includes the apron area associated with T2 and T3.



Source: Los Angeles World Airports, February 2016.
Prepared by: CDM Smith, August 2016.

LAX Terminals 2 and 3 Modernization Project	Regional Location Map	Figure 2-1

LAX Terminals 2 and 3 Modernization Project	Project Location Map	Figure 2-2



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

LAX Terminals 2 and 3 Modernization Project	Project Site	Figure 2-3

2.3 Project Objectives

The underlying purposes of improvements to the facilities at T2 and T3 are to provide improved security, passenger experience, operations, convenience, and quality of service. The specific objectives of the proposed project are to:

- Meet Transportation Security Administration (TSA) and U.S. Customs and Border Protection (CBP) requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security;
- Modernize and revitalize existing T2 and T3 in order to improve passenger level of service and amenities within the terminals and improve building systems, as has been previously done for other terminals within the CTA;
- Coordinate improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3 to be compatible with proposed changes to the T2 and T3 buildings and anticipated airline fleets and uses;
- Enhance the interior and exterior of the terminals to benefit the overall appearance of the CTA;
- Provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once; and
- Provide for improvements within each terminal (T2 and T3) that are common to the functions and operations of both terminals and therefore can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service by reducing redundancies in passenger and baggage processing by providing facilities that support multiple terminals, when feasible.

2.4 Project Characteristics

The proposed project is the modernization and revitalization of existing T2 and T3 at LAX. Specific improvements are described below. A majority of the proposed project elements would upgrade existing aging infrastructure and building systems, as well as update security functions, which would enhance and optimize passenger experience. In short, the improvements proposed at T2 and T3 would improve safety and security, operational efficiencies, quality of service, and customer experience for passengers at LAX.

A benefit of the modernization would discontinue the current service model of having one terminal building with passenger and baggage processing that supports one associated concourse with aircraft gates (i.e., the passenger processing facilities currently within the T2 terminal are specific to the T2 concourse and associated T2 gates, and the same is true relative to the relationship between the existing T3 terminal, T3 concourse, and T3 gates), and instead, provide improvements and functions that can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service.

Refer to **Table 2-1** for square footage estimates of floor area associated with each level of the proposed project elements and **Figure 2-4** for a diagram of the existing and proposed site plans associated with the proposed project. Proposed plans for each level of the LAX T2/T3 Modernization Project facilities are provided in **Figures 2-5** through **2-10**. **Figure 2-11** provides a building section view of the proposed project facilities. Refer to Section 1.5 in Chapter 1, *Introduction and Executive Summary*, for definitions of airport terminology used below.

Terminal 2 Concourse

The improvements at the existing T2 concourse would include:

- Extension of the existing upper floor/"club level," creating additional area for airline clubs/lounges, new vertical circulation (elevators, escalators, and stairs), and area to improve the connection of the sterile corridor[3] at the concourse level to the Federal Inspection Station (FIS) facility at the arrivals level.
- Interior renovation/reconfiguration of space to provide improved level of service and amenities – including interior renovation/reconfiguration to provide improved quality of service and amenities such as upgrades to building systems (i.e., mechanical, plumbing, and information technology [IT]), improvements at the FIS facility, reconfigured/remodeled office and support space, and the replacement of/modifications to the baggage handling system (BHS) to coordinate with the new passenger check-in positions.
- Installation of new PBBs.
- Reconfiguration of the existing 10 gate positions within the existing terminal linear frontage at T2.

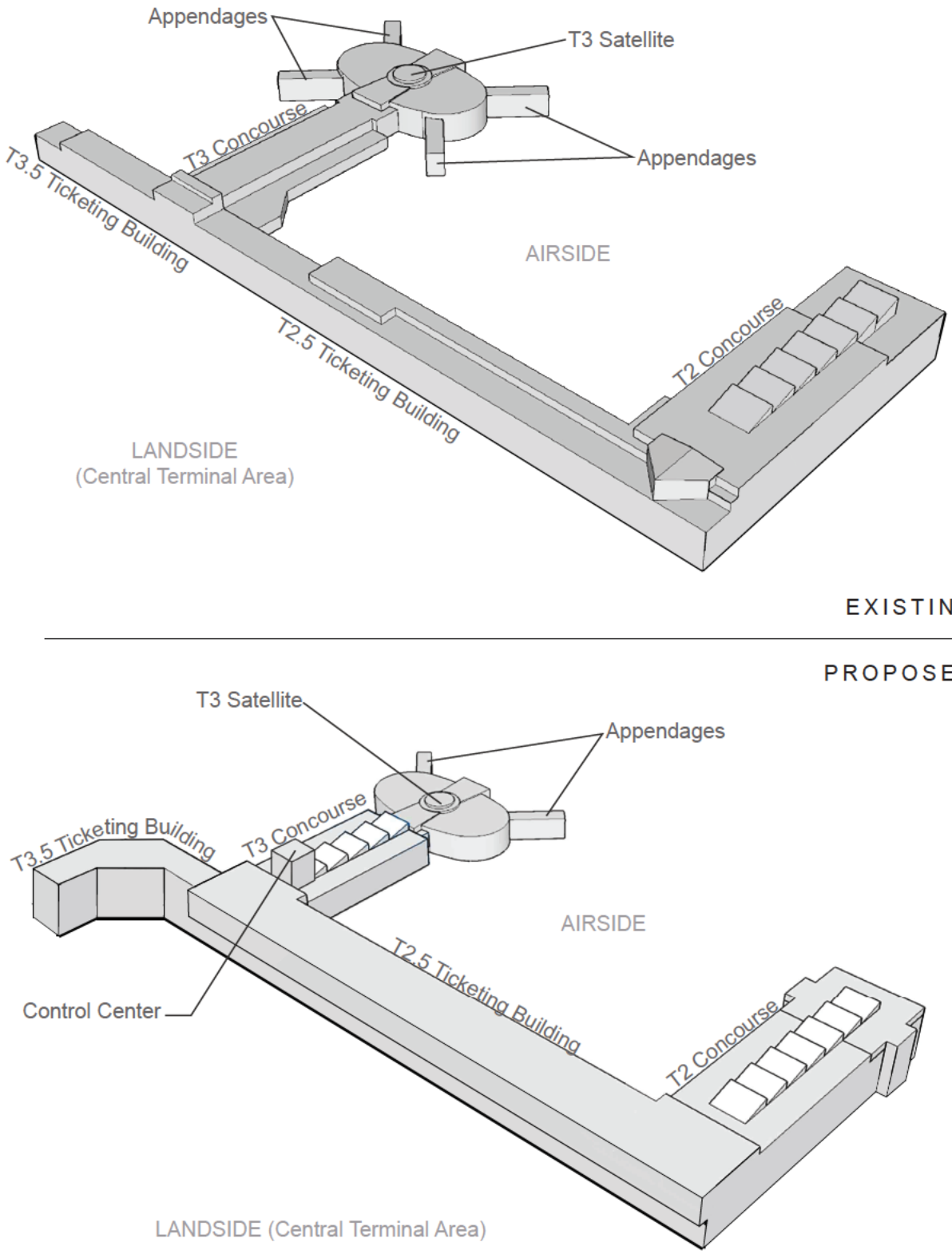
The additional building floor area to be constructed in conjunction with the improvements to the T2 concourse building would occur primarily at the north end of the concourse, as shown in **Figures 2-4**, **2-7**, and **2-8**. The maximum height of the modernized T2 concourse would be approximately 70 feet from the grade of the lower level roadway. The airport would continue to operate within the existing limitations, and it is anticipated that passengers would not change their modes of transportation or their arrival and departure distribution patterns (refer to Section 2.6 below for additional details regarding continued operation at the project site).

[3] The sterile corridors lead from the arrivals gate to the FIS area and may be secured with access control solutions that include automatic alarms, closed-circuit television (CCTV) cameras and staffed personnel, and directional signage. U.S. CBP maintains sterility to prevent mixing of cleared and uncleared passengers, as well as the potential for contraband exchange.

Table 2-1
Total Building Area

Facility		Existing Area (square feet - sf)	Existing Area Renovation (sf)	Existing Area Demolition (sf)	Existing Area Rebuild (sf)	New Construction (sf)	Total Area (sf)
T2.5 Ticketing Building	Mechanical Space	0	0	0	0	40,000	40,000
	Office Level	2,725	0	-2,725	2,725	142,275	145,000
	SSCP/Office	40,123	0	-40,123	40,123	104,877	145,000
	Ticketing Level	89,210	0	-89,210	89,210	25,790	115,000
	Arrivals Level	91,107	0	-91,107	91,107	133,893	225,000
	Total	223,165	0	-223,165	223,165	446,835	670,000
Terminal 2 Concourse Building	Mechanical Space	0	0	0	0	5,000	5,000
	Lounge Level	36,727	14,300	0	0	19,803	56,530
	Concourse Level	86,048	60,200	0	0	17,952	104,000
	Ramp Level	84,130	42,200	0	0	13,850	97,980
	FIS Level	87,796	42,400	0	0	13,204	101,000
	Total	294,701	159,100	0	0	69,809	364,510
Terminal 3 Concourse Building	Control Center	0	0	0	0	2,200	2,200
	Mechanical Space	0	0	0	0	15,000	15,000
	Lounge Level	15,164	0	0	0	47,336	62,500
	Concourse Level	96,744	58,394	-38,350	38,350	28,256	125,000
	Ramp Level	95,435	46,537	-48,898	48,898	29,565	125,000
	Tunnel Level	23,800	23,800	0	0	0	23,800
	Total	231,143	128,731	-87,248	87,248	122,357	353,500
Terminal 3.5 Ticketing Building	Mechanical Space	0	0	0	0	12,000	12,000
	Office Level	0	0	0	0	45,000	45,000
	SSCP/Office Level	0	0	0	0	45,000	45,000
	Ticketing Level	16,779	0	-16,779	16,779	53,221	70,000
	Arrivals Level	22,230	0	-22,230	22,230	37,770	60,000
	Total	39,009	0	-39,009	39,009	192,991	232,000
Grand Total		**788,018**	**287,831**	**-349,422**	**349,422**	**831,992**	**1,620,010**

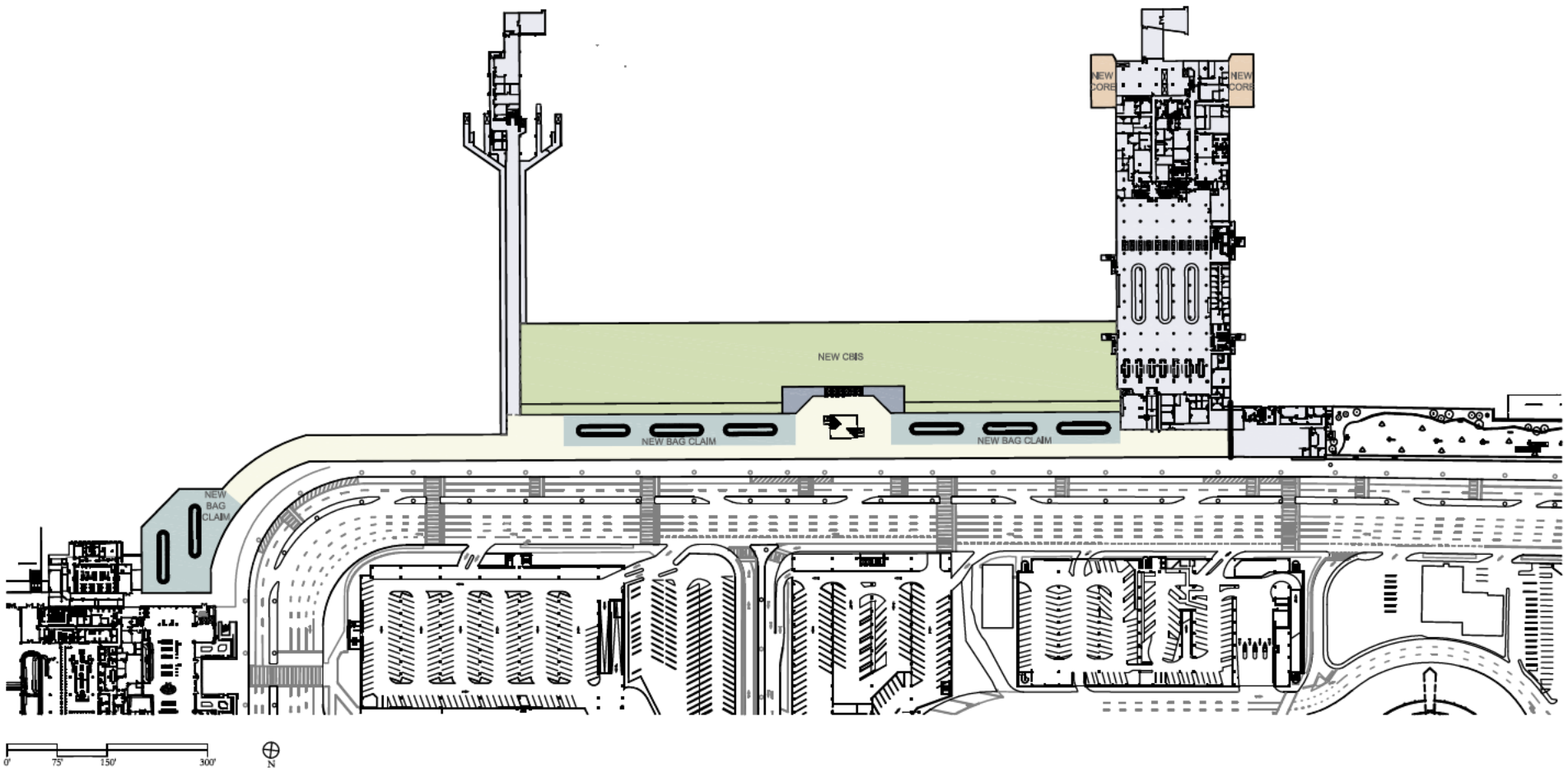
Source: LAWA, 2016



T#: Terminal #
Note: For discussion purposes only. Actual development and placement details may vary.

Source: Los Angeles World Airports, May 2016.
Prepared by: CDM Smith, August 2016.

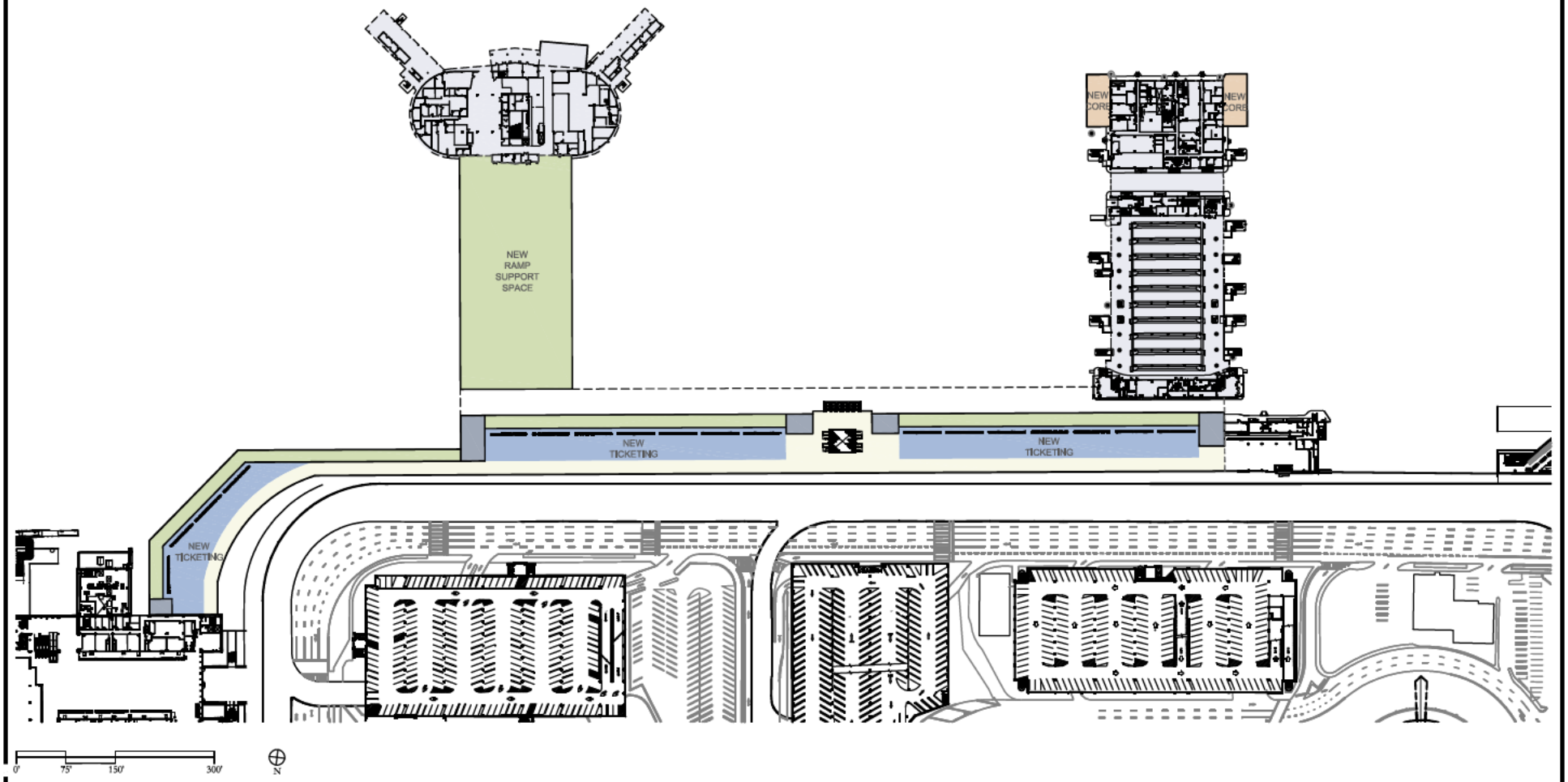
LAX Terminals 2 and 3 Modernization Project	Existing and Proposed Site Plans	Figure 2-4



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

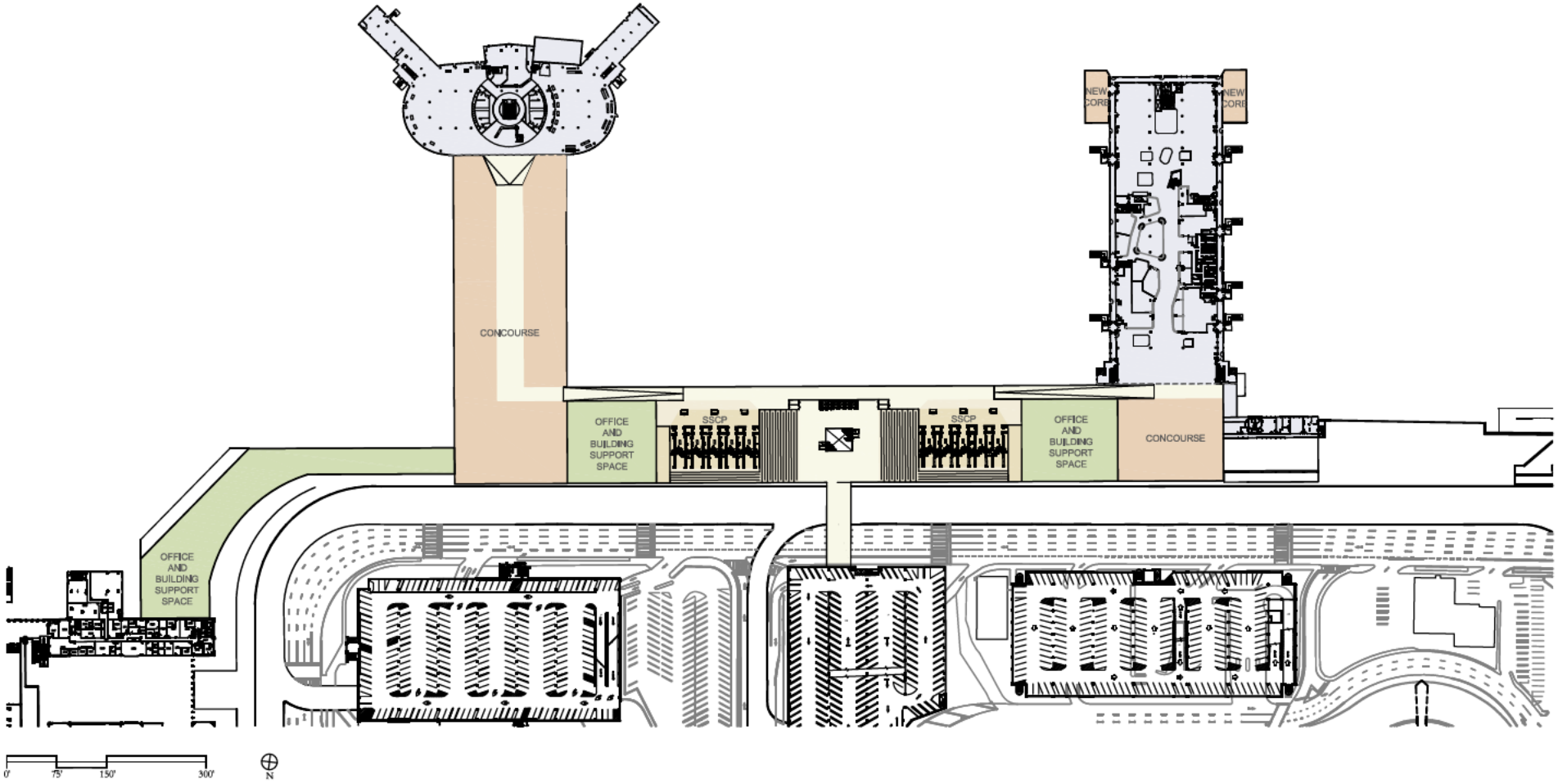
LAX Terminals 2 and 3 Modernization Project	Arrivals Level Plan	Figure 2-5



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

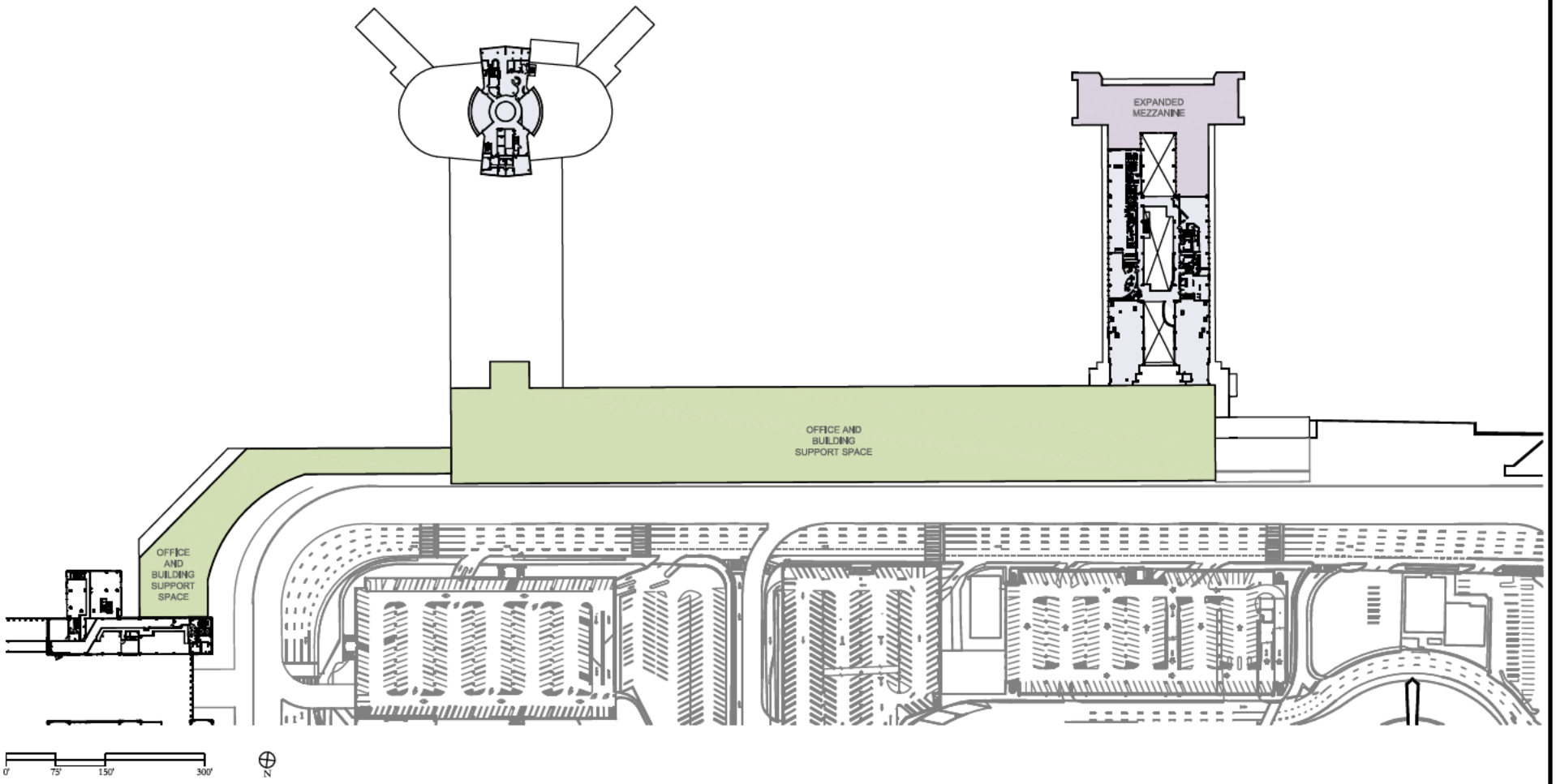
LAX Terminals 2 and 3 Modernization Project	Departures Level Plan	Figure 2-6



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

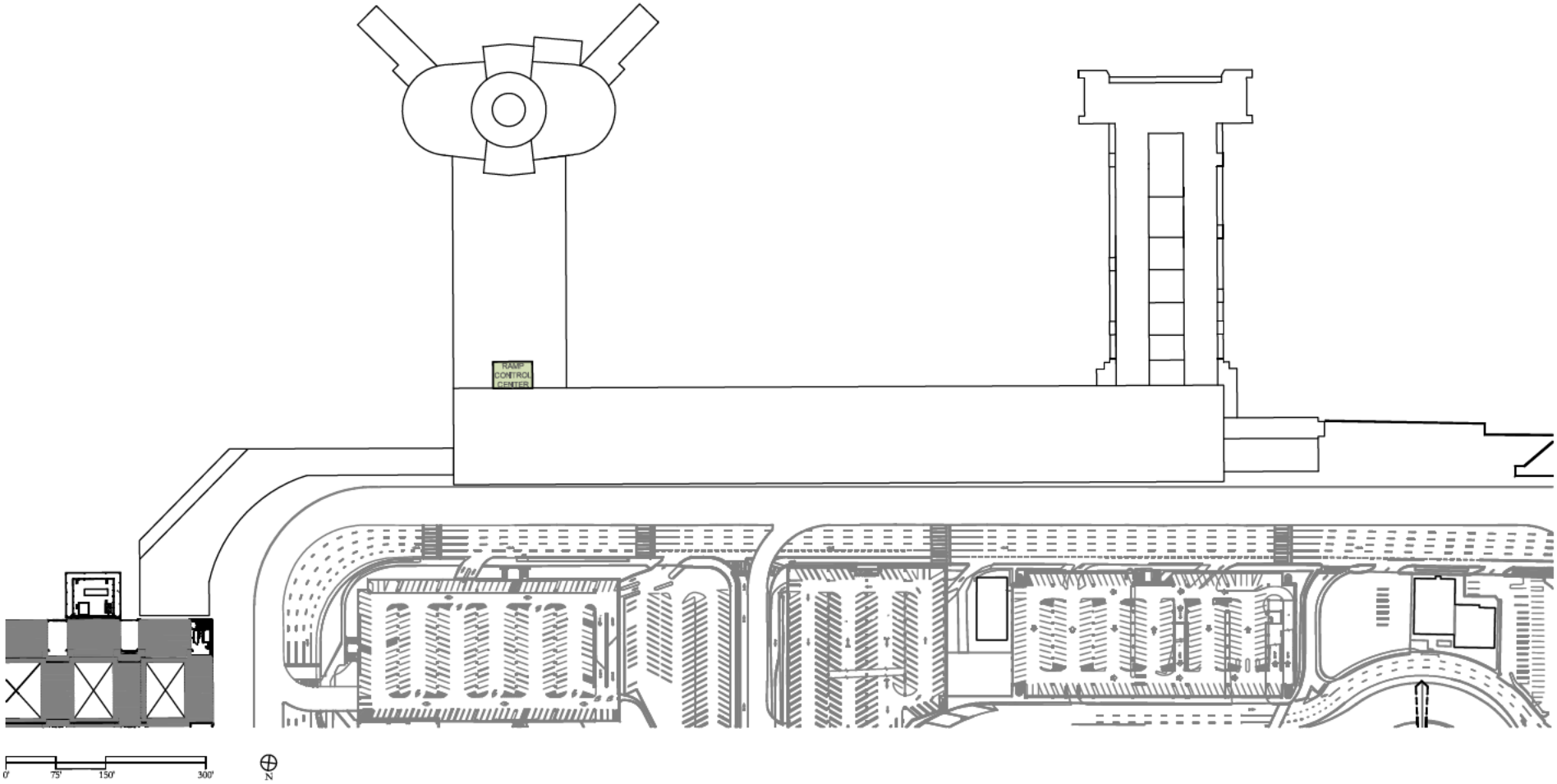
LAX Terminals 2 and 3 Modernization Project	Concourse Level Plan	Figure 2-7



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

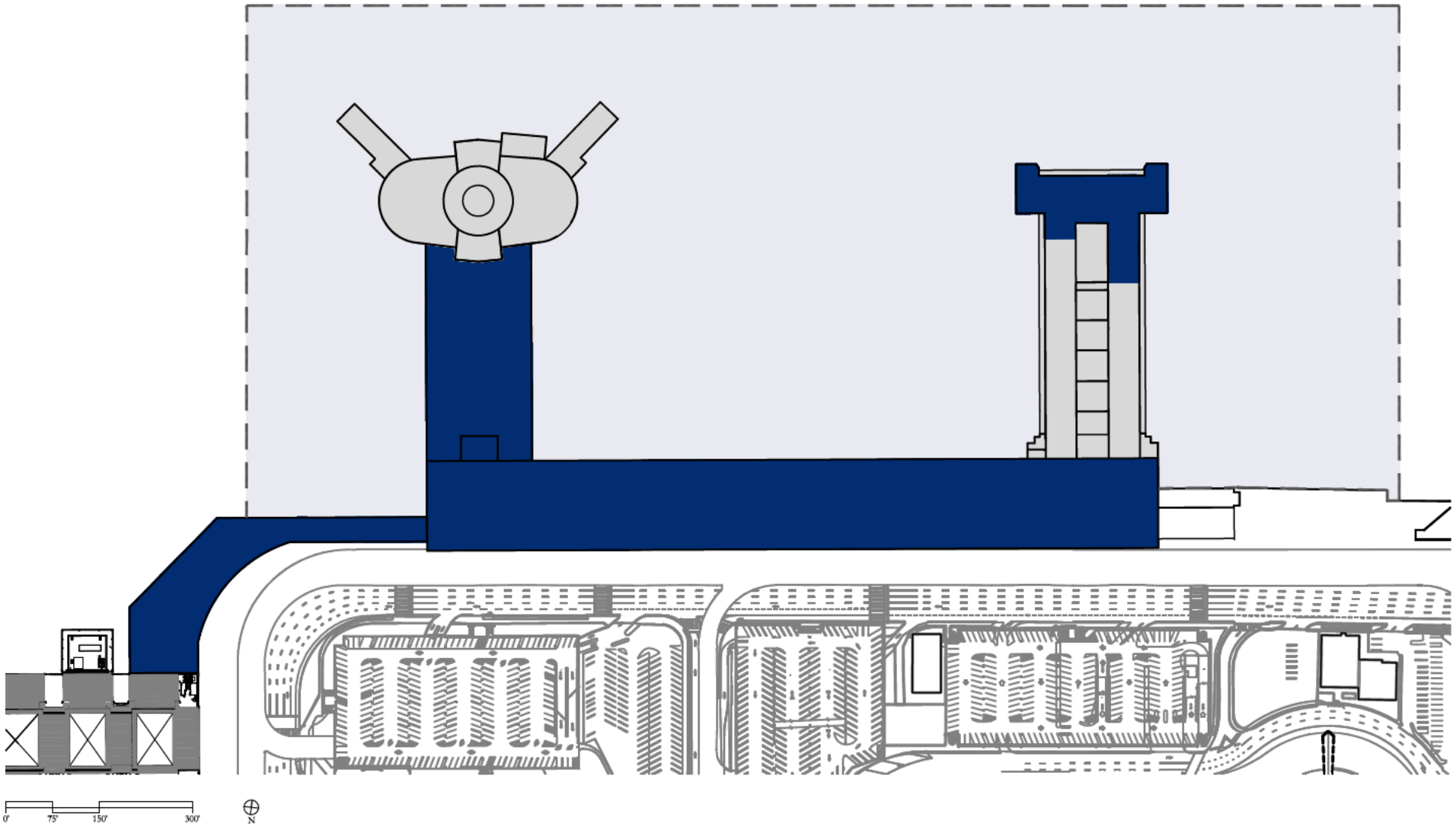
LAX Terminals 2 and 3 Modernization Project	Mezzanine Level Plan	Figure 2-8



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

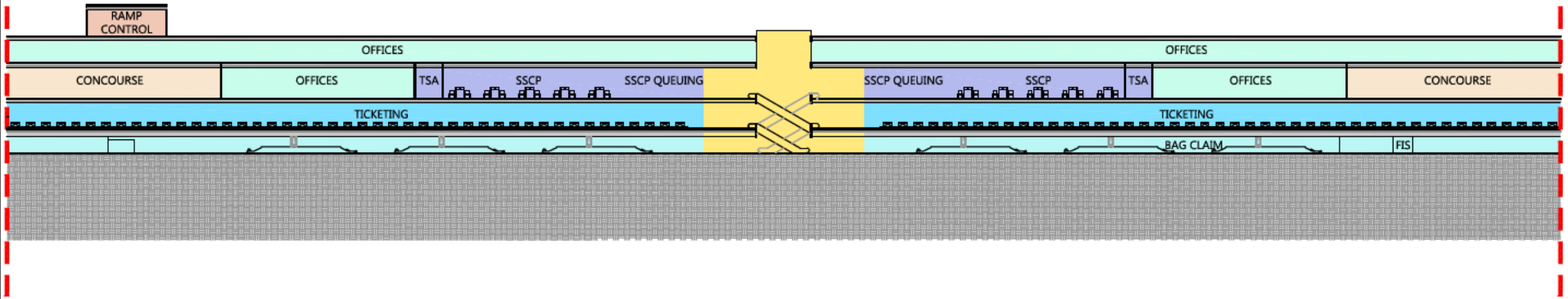
LAX Terminals 2 and 3 Modernization Project	Control Center Plan	Figure 2-9



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, October 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

LAX Terminals 2 and 3 Modernization Project	Roof Plan	Figure 2-10



Terminal 3 (left)
Terminal 2 (right)

Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, December 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

LAX Terminals 2 and 3 Modernization Project	Building Section View	Figure 2-11

Terminal 3 Concourse and Satellite

Modernization of the T3 concourse would include:

- Demolition of the southern appendages of the T3 satellite;
- Demolition and reconstruction of the apron and concourse levels of the concourse building;
- The proposed concourse would include:
  - New foundations and structure (e.g., seismic upgrades);
  - New building systems including mechanical, electrical, plumbing, fire life safety, and IT;
  - New exterior enclosures and interior space finish work;
  - New functional spaces that include new baggage handling systems and support space at the apron level;
  - New holdroom, concessions, passenger amenity spaces at the concourse level;
  - New airline lounge space;
  - Airline and tenant support offices/storage and areas for building systems (electrical, mechanical, IT, etc.) located throughout the building;
  - Installation of new PBBs;
  - Reconfiguration of the existing 13 gate positions within the existing terminal linear frontage at T3; and,
  - Control center.

As shown in **Figure 2-4**, the T3 concourse would be rebuilt in approximately the same location as it currently exists, but the new structure would be approximately 45 feet wider on each side than the existing structure to allow for modernized holdrooms, concessions, support space, etc. for improved levels of customer service. The widening of the concourse would not modify the aircraft parking limit line (i.e., a line established by the Federal Aviation Administration [FAA] beyond which no part of a parked aircraft may protrude). Refer to Section 2.6 below for additional information regarding the relationship between no increase in the linear frontage that is currently available to accommodate aircraft parking and how this limits the ability of the facility to cause or facilitate an increase in passenger capacity.

The new control center would be similar to what exists at T5, which includes staff that coordinate aircraft arrivals at, and push-back from, the individual gates on the T2 and T3 concourses and coordinate aircraft movements on the alleyways adjacent to the concourses. The proposed control center would be located at the south end of the T3 concourse (refer to the proposed site plan on **Figure 2-4**). The control center would work in conjunction with the FAA's airport traffic control tower (ATCT) in managing the movement of aircraft on the airfield. Mechanical equipment would be located on the roof in mechanical penthouses to serve the spaces below. Where demolition occurs at the T3 satellite appendages, the exterior walls would be in-filled and minor interior improvements would be made to accommodate the new configuration. The proposed project would retain the existing underground tunnel associated with the T3 concourse, including the ceramic mosaic tile mural. The maximum height of the modernized T3 would be approximately 70 feet from the grade of the lower level roadway, with the maximum height of the ramp control tower at the south end of the T3 concourse building at 110 feet from grade.

T2.5 Ticketing Building

The existing ticketing buildings at T2 and T3 would be completely demolished and rebuilt. The ticketing buildings being rebuilt are referred to as the T2.5 and T3.5 ticketing buildings. In the existing configuration, one ticketing building supports one concourse. Currently the secure concourses of T2 and T3 are not connected. This prevents the movement of secure passengers between concourses. In order to connect from one secure concourse to another, passengers must leave the terminals, go out to the curb, and go back through security again. This creates additional operational demand for Security Screening Checkpoint

(SSCP) function when a terminal has to rescreen passengers who have already gone through security (are already secure) at another terminal. With the implementation of the proposed project, as explained in more detail below, the new T2.5 ticketing building would support multiple concourses. The additional passenger and baggage processing space in the new T2.5 ticketing building would improve passenger quality of service and provide additional space to help meet federal security requirements such as baggage and passenger screening. The T2.5 ticketing building would also provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, in addition to the non-secure connector between the ticketing buildings as noted below. These features would allow one ticketing building to support multiple concourses, provide flexibility in passenger and baggage processing, and improve the quality of customer service.

The new T2.5 ticketing building would include:

- New foundations and structure;
- New building systems including mechanical, electrical, plumbing, fire life safety, and IT;
- New exterior enclosures and interior space finish work;
- The improvements would include:
  - Baggage claim and Checked Baggage Inspection Systems (CBIS);
  - Baggage storage;
  - Associated office space;
  - Non-secure connector between the ticketing buildings;
  - Ticketing/passenger check-in (which would process all passengers on flights located in T2 and T3) and office space to support the check-in process;
  - SSCP;
  - TSA support space;
  - Associated queue areas;
  - Secure connector pathway on the north side of the T2.5 ticketing building to accommodate secure passenger traffic between the T2 and T3 concourses; and,
  - Other improvements would include lounge space, building systems support spaces, mechanical rooms or space, vertical circulation, restrooms, support, and miscellaneous storage space.

The new T2.5 ticketing building would consist of four levels, with the additional building floor area necessary to accommodate the improvements described above (see **Table 2-1** and **Figure 2-4**). The relocation of the SSCP from the T2 and T3 concourses to the T2.5 ticketing building, would allow for more effective use of space in the concourses including opportunities for improved holdroom/concessions. The height of the T2.5 ticketing building would be approximately 100 feet from grade (see **Figure 2-11**).

T3.5 Ticketing Building

The site where the new T3.5 ticketing building would be located currently holds the existing two-level T3 ticketing building, which would be demolished as part of the proposed project, as well as a paved open area to the southwest of T3.

The reconstructed T3.5 ticketing building would include additional passenger and baggage processing space, improving passenger quality of service, and would provide additional space to help meet federal security requirements. The proposed T3.5 ticketing building would be designed to accommodate a connection to a proposed future planned LAX Terminal 3 Connector between T3 and the Tom Bradley International Terminal (TBIT); however, the proposed project is not reliant upon, and can be implemented with or without, that potential connection.

The proposed T3.5 ticketing building would include:

- New foundations and structure;
- New building systems including mechanical, electrical, plumbing, fire life safety, and IT; and new exterior enclosures and interior space finish work;
- The improvements would include:
  - Baggage related functions (including bag storage);
  - Associated office space;
  - Ticketing/passenger check-in, and office space to support the check-in process;
  - Non-secure connector between the T2.5 and T3.5 ticketing buildings;
  - Other improvements would include office space, lounge space, vertical circulation, restrooms, support and miscellaneous storage space, and building systems support spaces; and,
  - Secure connection to the T2.5 ticketing building and a proposed future LAX T3 Connector[4] that would connect to TBIT at the concourse level.

The T3.5 ticketing building would consist of four levels, with the additional building floor area necessary to accommodate the improvements described above (see **Table 2-1** and **Figure 2-4**). The height of the T3.5 ticketing building would be approximately 100 feet from grade (see **Figure 2-11**).

2.5 Construction Schedule and Activities

The primary consideration in planning for the construction activities is to maintain safe and uninterrupted operation of the airport, including runway operations and passenger access to terminals. The proposed project would take approximately 76 months (six years, four months) to construct. Construction could commence in approximately the fourth quarter 2017 and is projected to end in late-2023. Work would occur during three shifts per day: Shift 1 from 7:00 am to 3:00 pm, Shift 2 from 3:00 pm to 11:00 pm, and Shift 3 from 11:00 pm to 7:00 am. At peak construction, a cumulative total of approximately 550 daily construction personnel would be on-site over the course of the three work shifts. The majority of the construction activities would occur during daytime hours behind construction barriers. Shift 3 (the overnight shift) would be used for those work activities that cannot be accomplished on the day and night shifts due to coordination and interference issues (e.g., airport operations, safety, delivery of materials and equipment). It is estimated that, at peak construction, the day and night shifts (Shifts 1 and 2) would have approximately 180 employees per shift, with the balance (190 employees) on the overnight shift (Shift 3). An overnight shift would not be required for the entire construction period. As further detailed in Section 4.1, *Air Quality and Human Health Risk*, it is assumed for a peak day that all three shifts would occur. For annual air quality analysis assumptions, an average of 2.2 shifts were assumed to capture the less frequent need for a night shift. Conflicts with terminal activities during construction would be avoided through monitoring of flight schedules and close coordination with terminal operations on a daily basis. Project construction would result in phased gate closures, shuttle transportation for employees and passengers,[5] and restriping on the ramp for new aircraft.

The proposed improvements would be constructed on portions of LAX that are currently paved or contain pre-existing buildings. The total area of ground surface to be disturbed (including the apron area) would

[4] The future LAX T3 Connector was previously approved under the Bradley West Final EIR (September 2009).

[5] To provide a secure connection for connecting passengers and airport employees between T2 and T3 and TBIT during construction for modernization of the T2.5 and T3.5 ticketing buildings, shuttle buses would run between bus gates to be constructed at T2 and T3 during the initial phase of the proposed project and the existing bus gates at TBIT.

be approximately 1,490,000 square feet (sf), extending down to a maximum depth of approximately 16 feet. The proposed project would require the excavation of approximately 134,400 cubic yards (cy) of cut/fill soil.

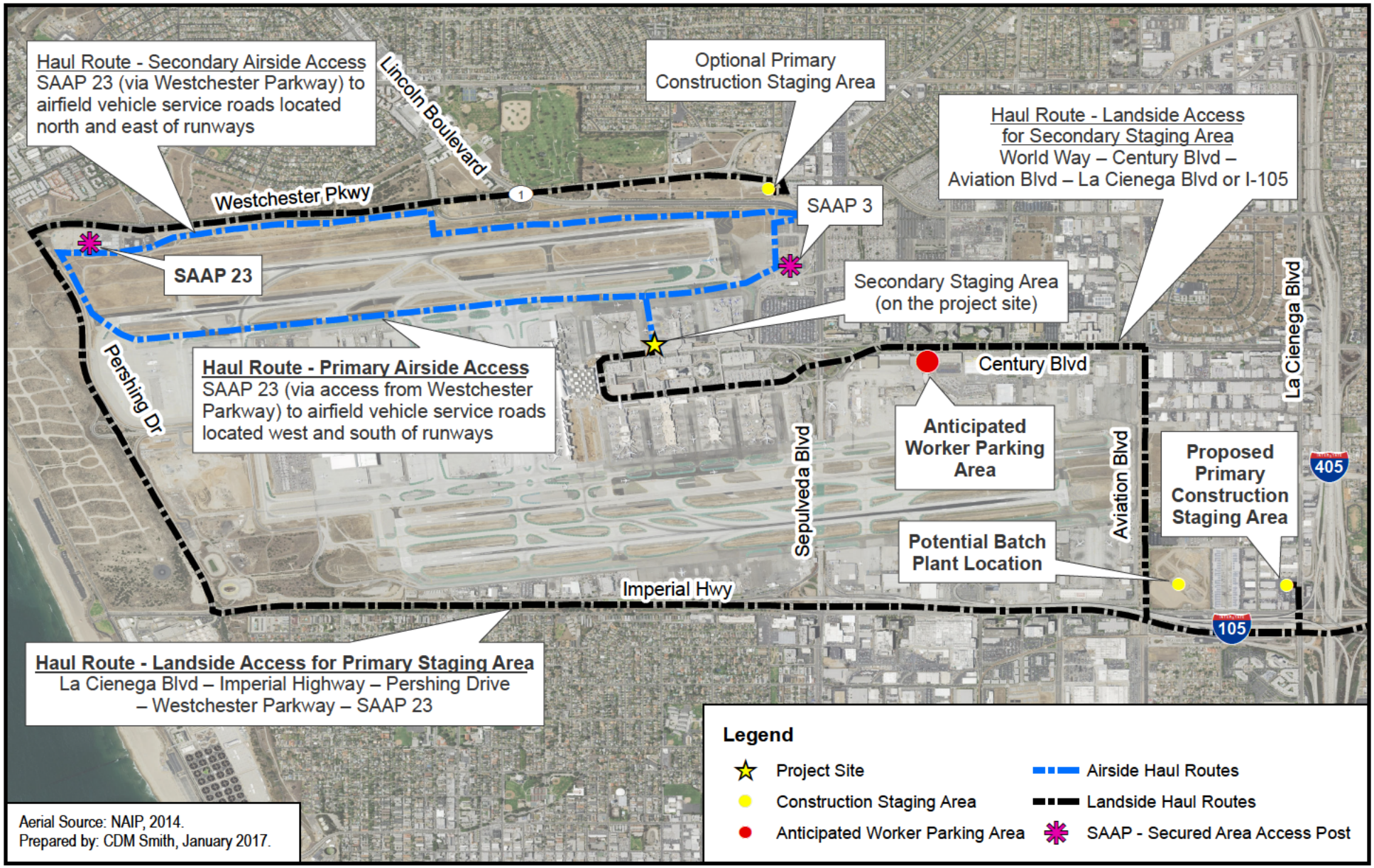
The proposed project would require construction access from both the landside and airside. No permanent lane or road closures either on-airport or off-airport would be required for construction. However, temporary lane closures in the CTA may be required periodically to facilitate some construction activities. To minimize impacts to the CTA roadway system and Airport operations during construction, any lane closures required during construction would occur during the night shift whenever possible. It is unlikely that lane closures would be required for any extended period. There is the possibility that a short-term lane closure on the upper level roadway within the CTA may be needed at some point in the construction program for the temporary installation of a crane to transfer/place structural steel to areas within the project site. Such a lane closure, if any, would be unlikely to exceed one week, and would require advance coordination with, and approval by LAWA in accordance with LAWA's Construction and Logistics Management (CALM) procedures. Access to the passenger terminals would be maintained throughout any lane closures, but drop-off and pick-up areas may temporarily shift.

T2 and T3 would remain operational at all times during construction. In addition, conflicts between terminal and airfield activities would be avoided by cordoning off construction areas from the airfield.

Anticipated construction staging and construction worker parking areas and haul routes that would be used for the proposed project are shown on **Figure 2-12**. The proposed primary construction staging area, including construction offices, would be located on an existing industrial parcel on La Cienega Boulevard, just north of Imperial Highway. The proposed primary construction staging area is completely developed, including a large warehouse structure (approximately 30,000 square feet of floor area) and associated parking area. An optional primary construction staging area is within the northern area of the airport, on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard. The subject construction staging area is highly disturbed. The site was previously developed for residential and commercial uses, which were later demolished. The vacated areas have been periodically used for construction staging and materials storage for other LAX development projects. Access to the optional primary construction staging area would be to/from Sepulveda Westway.

Given that many construction projects are occurring at LAX (refer to Table 3-1 in Chapter 3, *Overview of Project Setting*), multiple potential staging areas were assumed in the analysis in order to capture potential impacts of primary construction staging in two different areas within the study area. The decision of which of the two areas would be used for the proposed project's construction staging cannot reasonably be determined at this time and would be coordinated with LAWA's CALM Team during the bid and award process, taking into consideration the availability of the areas at the time.

Portions of the project site that are not actively under construction at the time may also be used as a construction staging area (referred to as a 'secondary staging area' on **Figure 2-12**). The exact locations of such secondary construction staging within the project site would vary depending on the particular construction activity underway at the time, taking into consideration the need to keep other portions of the site in operation at that time. For example, improvements proposed for apron areas may be sequenced on a gate-by-gate basis to minimize the number of gates taken out of operation at any given time during the overall construction program, and, as such, secondary construction staging for such improvements would occur within the construction footprint of the particular gate area being improved and would shift to a new location as a different gate apron area goes into construction.



LAX Terminals 2 and 3 Modernization Project	**Construction Staging Areas and Haul Routes**	Figure **2-12**

It is possible that concrete to be used for project construction may be produced through the use of an on-airport concrete batch plant,[6] if an on-airport batch plant is available at the time of construction of the proposed project and at the discretion of the contractor. Should LAWA determine that such concrete production can occur at an on-airport concrete batch plant, the location of the batch plant would likely be at the LAWA-owned parcel on the northeast corner of Aviation Boulevard and Imperial Highway, as shown on **Figure 2-12**. Operation of a concrete batch plant has occurred on this parcel on other past and present construction projects at LAX.

Construction staging would be coordinated by LAWA's CALM Team. The CALM Team helps monitor and coordinate the construction logistics of development projects at LAX in the interest of avoiding conflicts between ongoing airport operations and construction activities. Construction staging activities, such as short-term storage and/or assembly of construction materials that would soon be installed, short-term storage of recently generated construction wastes that are awaiting pick-up and disposal, and the like, on the project site (referred to as a 'secondary staging area' on **Figure 2-12**) would also be subject to coordination with, and approval by, LAWA Airfield Operations.

The on-airport airside (i.e., non-public areas within the Airfield Operations Area) entry point for construction materials being transported to and from the project site would be at Secured Area Access Post (SAAP) No. 23, located southeast of the intersection of Westchester Parkway and Pershing Drive. The primary airside haul route within the Airfield Operations Area (AOA) between the project site and SAAP No. 23 would be along the vehicle service road (VSR) that is south of and parallel to Taxiway D, connecting to the VSR that is east of and parallel to Pershing Drive. A secondary airside haul route within the AOA would include the Taxiway D VSR that connects to the north-south VSR at the east end of the north airfield complex and then to the east-west VSR on the north side of Runway 6L-24R, subject to coordination with, and approval by LAWA Airfield Operations. Secondary airside access to the AOA would be available at times through SAAP No. 3, which is currently being relocated to a site southeast of the north runway complex, near the intersection of Alverstone Avenue and Davidson Drive. While the vast majority of access to and from the project site would likely be via the AOA through SAAP 23, there may be occasions when access to and from the project site would occur via World Way, Century Boulevard, and Aviation Boulevard. As shown on **Figure 2-12**, the haul route on public roads to and from the airside access point to the project site (i.e., SAAP No. 23), would extend from the driveway at SAAP No. 23, west on Westchester Parkway, south on Pershing Drive, east on Imperial Highway, then either: (1) north on La Cienega Boulevard and into the proposed primary construction staging area for deliveries going directly between the project site and the proposed primary construction staging area; or, (2) continued east onto I-105 with connections to I-405 for deliveries directly to and from the project site that do not involve the construction staging area. As required by the City of Los Angeles, Department of Building and Safety, LAWA would submit a Haul Route Form and Haul Route Map, as shown on **Figure 2-12**, covering the export of soil or demolition debris off-site. In addition, pursuant to standard City of Los Angeles, Department of Transportation (LADOT) practices, a Work Traffic Control Plan, showing the location of construction areas and identifying construction traffic as evaluated in the EIR, would be submitted to LADOT.

In situations where construction staging (such as short-term storage and/or assembly of construction materials that would soon be installed, short-term storage of recently generated construction wastes that are awaiting pick-up and disposal) occurs directly on the project site and is accessed from the landside (i.e., public areas outside the AOA), such access would be through the CTA. Trucks leaving the landside portion of the project construction site would travel through the CTA to head east on Century Boulevard, then south on Aviation Boulevard, and then either: (1) east on Imperial Highway and north on La Cienega Boulevard leading into the proposed primary construction staging area for deliveries going between the

[6] A concrete batch plant is a facility where the constituents of concrete (i.e., cement, sand, rock, and water) are mixed together and transferred to concrete haul trucks for immediate use/placement at a nearby construction site(s).

proposed primary construction staging area and the secondary staging area; or (2) continued south onto I-105 with connections to I-405 for deliveries directly to and from the secondary staging area.

For the purposes of the construction traffic impact analysis, construction contractor parking is assumed to occur at Lot P1 located southeast of the intersection of Century Boulevard and Avion Drive (6075 West Century Boulevard), with workers being shuttled to and from the CTA/project site via Century Boulevard and World Way. Construction employees would be shuttled to and from the project site for their shifts. This parking lot is located in the general vicinity of the project site with direct access to and from the site provided via Century Boulevard and World Way. Construction employees would be shuttled to their respective construction site by way of shuttle bus. The number of shuttle buses required to transport the construction employees was estimated based on an assumed ratio of 30 passengers per bus. Understanding that the availability of Lot P1 for project-related construction employee parking can change between now and when project construction occurs, as Lot P1 can also be used for airport public parking or airport employee parking, or the project contractor may choose to utilize other parking lots in the nearby area, it is recognized that there are additional parking lots in the immediate area that offer project site access characteristics generally similar to those of Lot P1. Such additional parking lots, along with Lot P1, are identified and described in more detail within Section 4.4, *Construction Surface Transportation*.

LAWA Design and Construction Practices

The proposed project would be designed and constructed in accordance with the Los Angeles Green Building Code (LAGBC), which is based on the California Green Building Code (Cal Green), and would achieve, at a minimum, LAGBC Tier-1 conformance through environmentally-sensitive features including, but not limited to, the types described below. In addition, U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Silver level of sustainability measures would be implemented under the proposed project: these measures include the incorporation of energy saving measures such as installation of high efficiency fixtures and lighting and incorporation of energy saving design elements such as natural daylighting and naturally ventilated and unconditioned spaces.

The proposed project would be required to use recycled building materials in the new/modernized facilities, and to recycle a minimum of 75 percent of construction and demolition debris. Recycling programs would also be employed during operations. Recyclable materials would be collected in the terminals, and tenants operating in the terminals, including concessionaires and restaurant management companies, would be required to have their own recycling and waste reduction programs. Heating and cooling of the modernized terminals would be provided by LAWA's Central Utility Plant, which incorporates a number of efficiencies that conserve energy and reduce pollutant emissions. The Central Utility Plant at LAX is a state-of-the-art facility that provides heating and cooling to the CTA. The Central Utility Plant is located in the center of the CTA, south of the proposed project site (see project number 1 on **Figure 3-1** in Chapter 3, *Overview of Project Setting*. Further discussion of the Central Utility Plant at LAX is provided in Section 6.5 of Chapter 6, *Other Environmental Considerations*, of this Draft EIR. The modernized terminals would include efficient lighting fixtures and controls with occupancy sensors to reduce energy consumption during off-peak hours, and the terminals' heating, ventilation, and air conditioning controls would be designed to reset temperatures to maximum efficiency without sacrificing occupant comfort. Where possible, coated glass that minimizes heat gain would be used on exterior walls, and building materials and furnishings would be made of recycled content, and would consist of low volatile organic compound (VOC)-emitting paints, adhesives, carpets, and sealants, where feasible. To conserve potable water, bathrooms in the modernized terminals would be designed with low- and ultra-low-flow systems and recycled water would be used for construction-related dust control and construction equipment washing when feasible.

The relationship of these features and practices to potential project impacts are identified in Chapters 4 and 6 of the Draft EIR.

2.6 Operation

Improvements to the facilities at T2 and T3, and their respective ticketing buildings, are intended to provide improved security, passenger experience, convenience, operations, and quality of service through renovations of aging terminal facilities and apron area. After implementation of the proposed project, T2 and T3 would meet TSA and CBP requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security, as well as provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once.

As detailed in Section 4.2, *Greenhouse Gas Emissions*, and Chapter 6, *Other Environmental Considerations* (Section 6.5), the modernization of T2 and T3 would replace aging and inefficient infrastructure with energy efficient buildings. In addition, the modernization would discontinue the current service model of having one terminal building with passenger and baggage processing that supports only one associated concourse with aircraft gates (i.e., the passenger processing facilities currently within each terminal are specific to that terminal's concourse and T2 gates); instead, the proposed project would provide improvements and functions that can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service.

The reconfiguration of existing passenger gate positions to match current aircraft fleet requirements would result in additional gate positions (increasing the total gates at T2 and T3 from 24 to 27 passenger gate positions). Improvements to the aircraft apron areas also include reconfiguration of passenger boarding bridge locations, aircraft fueling system hydrant locations, and ground support equipment parking locations at T2 and T3 to be compatible with proposed changes to the T2/T3 buildings and anticipated airline fleets and uses.

The proposed project would not result in any changes to existing T2 and T3 access or curbs. Curbs would continue to be used for passenger drop-off/pick-up and curbside baggage drop-off, although the exterior door locations (entrance/exit) would be shifted to accommodate the new design. In addition, implementation of the proposed project would not result in a change in the overall air traffic operations at LAX. Initial route and runway assignments would continue to be dictated by the origin or destination airport of the aircraft and such assignments are at the discretion of FAA air traffic control, as is the case today. Air traffic operations at LAX largely reflect the agglomeration of over 70 carriers currently operating at LAX, each of which has its own business model and schedules its flights and operations at LAX in light of overall international and/or domestic operations, market competition, and business objectives, as further described below.

Demand for air travel and aviation activity is determined by many factors as discussed by the Federal Aviation Administration (FAA) in its guidance for developing aviation forecasts: socioeconomic data, demographics, disposable income, geographic attributes, and external factors such fuel costs and airline industry-related factors (airline mergers, airline hubbing practices and airfares).[7] Airline business models are established based upon the targeted air travel demand and markets they serve. These business models and airline operations must react and adjust swiftly to changes in the marketplace of air travel. Flight schedules and aircraft types serving the LAX change frequently in response to local market trends and changes in demand and supply throughout airline networks. Airlines rely on a variety of aircraft throughout their system and assign them to specific markets based on a business plan. As discussed in the Airport Cooperative Research Board Report (ACRP) 98, "an integral component of network and demand strategies is the selection of aircraft type(s). The largest fleets—typically operated by full-service carriers—

[7] Federal Aviation Administration, Advisory Circular 150/5070-6B Airport Master Plans, Chapter 7 Aviation Forecasts, pp. 37-38.

consist of hundreds of aircraft spanning a wide range of aircraft sizes and types to best fit the mission of providing service across various markets and customer profiles."[8] It is therefore important to note that the LAWA does not control the factors that affect demand for air travel discussed in this paragraph, or decisions made by airlines to operate specific aircraft types at LAX.

As indicated above, the proposed project includes improvements to the T2 and T3 passenger terminal apron areas (i.e., replacement/resurfacing, restriping, and relocation of fuel pits) as well as the reconfiguration of existing passenger gate positions.[9] The physical boundaries of the T2 and T3 passenger terminal aprons within which aircraft can park for the enplanement and deplanement of passengers are constrained by the existing adjacent Taxilanes D, D8, D9 and D10. The proposed project would not change the extent or location of the parking limit lines associated with the passenger terminal apron areas at T2 and T3 depicted on **Figure 2-13**. Parking limit lines are the lines beyond which no part of a parked aircraft may protrude considering the object free areas (OFA) of the surrounding airfield components.[10] Airlines operating at T2 and T3 operate within the existing constraints of the terminal apron areas and parking limit lines depicted on **Figure 2-13**. These airlines configure aircraft parking positions to best match their aircraft fleet and provide the greatest flexibility throughout the day to meet their demand. Therefore, the proposed project improvements are confined within the boundaries of existing passenger terminal apron areas and parking limit lines associated with T2 and T3.

As with the parking limit lines, the available maximum linear frontage (or the distance in linear feet that provides for safe parking and operations of aircraft around each terminal including wingtip-to-wingtip clearances) is fixed. Linear frontage is not a function of the volume of the terminal or concourse. It is a function of the apron area available to accommodate aircraft parking positions (i.e., park aircraft side-by-side) and operations. Under the proposed project conditions, the available linear frontage at T2 and T3 would remain unchanged regardless of any proposed improvements to the concourse or satellite buildings. In addition, under the proposed project, T3 concourse would be widened by approximately 90 feet, which would reduce the available aircraft parking depth on each side of the concourse, and may result in a reduction in the size of aircraft that can be accommodated at the eastern and western gates of T3. The available linear frontage at T3 would remain unchanged compared to the existing conditions.

Because airlines operate different aircraft types and sizes, as discussed in the ACRP Report 25, airport planners and designers use metrics to normalize aircraft sizes (i.e., provide a common basis of comparison between different aircraft sizes) based on wingspan dimensions to relate to the available linear frontage. The narrowbody equivalent gate (NBEG) metric is used to normalize demand to a representative narrowbody aircraft gate (a Boeing 737-900 or an Airbus 320). At LAX, the available linear frontage is estimated to be 1,800 linear feet at T2 and 2,000 linear feet at T3. Assuming an industry standard practice for 20-foot wingtip-to-wingtip clearance and a wingspan of 118 feet for a Boeing 737-900, the available linear frontage at T2 and T3 can be converted to a total of 27 NBEG positions.

---

8 Transportation Research Board (TRB) of the National Academies, Airport Cooperative Research Board (ACRP) Report 98, Understanding Airline and Passenger Choice in Multi-Airport Regions, 2013, p17.

9 Los Angeles World Airports, Notice of Preparation and Initial Study for the Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project, August 2016, p. 1. (Appendix A of this Draft EIR)

10 Federal Aviation Administration, Advisory Circular 150/5300-13A, Airport Design, Paragraph 504.d., p. 167.

Prepared by: Ricondo & Associates, Inc., November 2016.

LAX Terminals 2 and 3 Modernization Project	**Existing Terminal 2 and Terminal 3 Parking Limit Lines**	Figure **2-13**

Figure 2-14 provides an illustration of a potential parking position layout which includes a total of 27 NBEG positions within the existing parking limit lines at T2 and T3. Therefore, airlines operating at T2 and T3 currently, or in the future, have an available linear frontage capable of accommodating up to 27 NBEG positions.

Within a constrained apron area, various aircraft parking position configurations can be identified based on the aircraft fleet expected to operate at the terminal, and may result in gate "dependencies" (i.e., the ability to accommodate certain aircraft at one gate is dependent upon the size of the aircraft at the adjacent gate) similar to those in effect today at LAX among the 23 total passenger gate positions available at T2 and T3. Gate dependencies can result in a gate being closed if a large aircraft is occupying an adjacent gate; or the reduction in aircraft size that can be accommodated if a large aircraft is occupying an adjacent gate.[11] Because of gate dependencies not all aircraft parking positions can be simultaneously used to maximum capacity. Gate dependencies exist at T2 and T3 due to the existing apron and airfield constraints. Airlines operating at T2 and T3 have the ability to re-gauge (i.e., change the size or "gauge" of the aircraft parking positions) or rearrange the aircraft parking configurations around each terminal within the constraint of the existing passenger terminal apron areas and parking limit lines. As discussed in the project description, improvements to T2 and T3 would include the reconfiguration of existing gate positions, which could result in there being additional passenger gate positions. However, within the constrained apron area and linear frontage at T2 and T3 discussed above, the potential additional passenger gate positions would result in additional gate dependencies and would be configured based on aircraft size either similar to or smaller than under existing conditions.

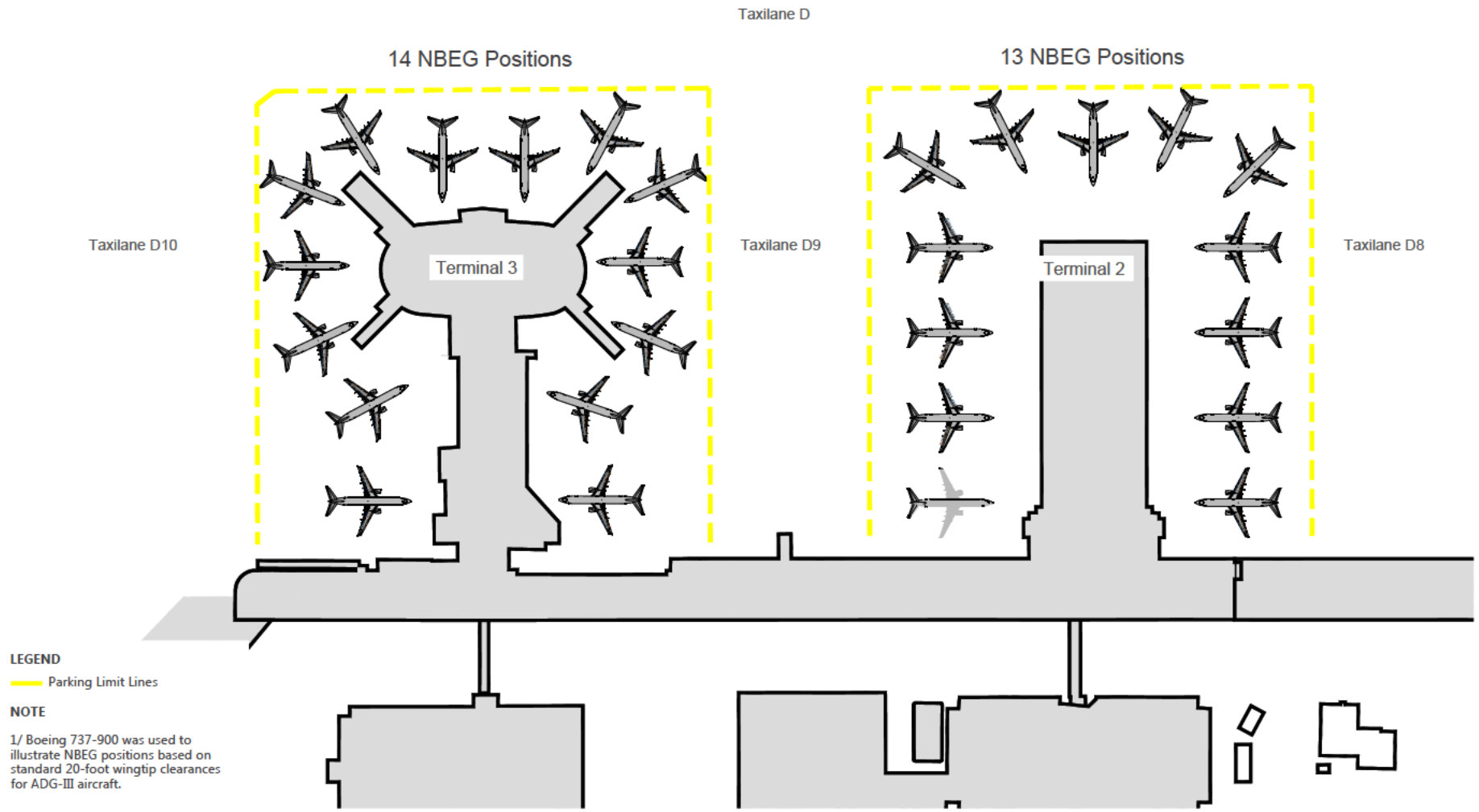
In summary, the proposed project improvements would take place within the constraints of the existing terminal passenger apron areas and parking limit lines associated with T2 and T3. T2 and T3 could accommodate up to 27 NBEG positions under existing conditions, which is the same number of passenger gate positions proposed under the project at T2 and T3, which as discussed above, would entail gate dependencies. The analysis of the proposed project and the existing airfield constraints indicates that any improvements to the concourse or satellite buildings would not change the available linear frontage available to park aircraft around T2 and T3. Therefore, the proposed project improvements would not create additional aircraft parking capacity that could not be achieved through the re-gauging of aircraft parking positions at T2 and T3 under existing conditions. Increases or decreases in operations and passenger volumes would occur with or without the proposed project, and thus would not be the result of, nor facilitated by, the proposed project improvements.

In addition, the proposed improvements to, and additional floor area proposed for, T2 and T3 would also not increase operations or passenger volumes beyond what would occur without the project. While the proposed project would improve passenger experience, convenience, and quality of service at T2 and T3, future projected aircraft operations and passenger growth are capable of being handled at T2 and T3 even without those improvements.

2.7 Intended Use of this EIR

Implementation of the proposed project would require approvals from and consultation with federal, state, and regional/local agencies. The EIR will be used by the following agencies in connection with permits and approvals necessary for the construction and operation of the proposed project. Federal, state, and regional/local agency actions required for the construction and operation of the proposed project may include, but are not limited to, those described below. This EIR may also be used in connection with other

[11] For instance, at T2, Gates 21 and 23 can either accommodate two Airbus 340-600 simultaneously, or two Airbus 321 (Gates 21 and 23) and a Boeing 757-200 (Gate 21B) simultaneously. During the time where the large Airbus 340-600 aircraft are not using Gates 21 and 23, higher operational efficiency can be reached by parking three aircraft within the available linear frontage.



Prepared by: Ricondo & Associates, Inc., November 2016.

Note: For discussion purposes only. Actual development and placement details may vary.

LAX Terminals 2 and 3 Modernization Project	**Illustration of Potential NBEG Positions within Existing Parking Limit Lines at Terminal 2 and Terminal 3**	Figure **2-14**

federal, state, or regional/local approvals, permits, or actions that may be deemed necessary for the proposed project, but which are not specifically identified below.

This Draft EIR will be used primarily to (1) inform decision-makers and the public about the potentially significant environmental effects of the proposed project and the ways to avoid or reduce the significant environmental effects to the extent feasible; (2) demonstrate to the public that the environment is being protected to the maximum extent feasible; and (3) ensure that the planning and decision-making processes reflect an understanding of the environmental effects of the proposed project.

In addition to use of this EIR by LAWA and the City of Los Angeles City Council and Planning Commission, the proposed project requires various federal, state, and local agency approvals. The California Environmental Quality Act (CEQA) requires that all state and local agencies consider the environmental consequences of projects over which they have discretionary authority. These agencies may use this EIR in their respective decision-making and approval processes, and federal agencies may use information in this EIR when conducting NEPA reviews. A list of federal, state, and local permits and approvals that may be needed to implement the proposed project includes, but is not necessarily limited to, the following:

2.7.1 Federal Actions

- U.S. Department of Transportation FAA - approval of Form 7460-1 (Notice of Proposed Construction or Alteration) in consideration of Part 77 requirements, and unconditional approval of the Airport Layout Plan (ALP) for the Airport depicting the proposed improvements pursuant to 49 U.S.C. 40103(b), 44718, and 47107(a)(16)); 14 Code of Federal Regulations (CFR) Part 77, Objects Affecting Navigable Airspace; and 14 CFR Part 157, Notice of Construction, Alteration, Activation, and Deactivation of Airports.

2.7.2 Regional Actions

- South Coast Air Quality Management District (SCAQMD) - review of any permits required under the Clean Air Act for stationary sources.

2.7.3 Local Actions

- LAWA Board of Airport Commissioners - Project approval;
- City Council of the City of Los Angeles - LAX Plan Compliance approval;
- Preparation of a project-specific Storm Water Management Plan or Standard Urban Storm Water Mitigation Plan for approval by the City of Los Angeles Bureau of Sanitation, Watershed Protection Division;
- City of Los Angeles Fire Department approval;
- City of Los Angeles Department of Cultural Affairs - Permit application clearance;
- City of Los Angeles Department of Transportation - Approval of Work Traffic Control Plan;
- City of Los Angeles Department of Building and Safety – Grading, foundation, and building permits and Haul Route Plan approval; and
- City of Los Angeles Department of Public Works – Permits for infrastructure improvements, as needed.

This page left intentionally blank

3. OVERVIEW OF PROJECT SETTING

3.1 Introduction

This chapter provides an overview of the existing land use, environmental, and development setting relevant to the proposed Terminals 2 and 3 Modernization Project (proposed project). More detailed descriptions of the existing setting specific to each of the environmental topics evaluated in this Environmental Impact Report (EIR) are provided within their respective sections in Chapter 4, *Environmental Impact Analysis*. This chapter also describes other development projects proposed at and adjacent to Los Angeles International Airport (LAX) that may, in conjunction with the proposed project, result in cumulative impacts to the environment.

3.2 Land Use Setting

As indicated in Chapter 1, *Introduction and Executive Summary*, and Chapter 2, *Project Description*, and depicted in Figure 2-1 and Figure 2-2, the proposed project is located at LAX, within a highly-developed, urbanized area consisting of airport, commercial, transportation (i.e., interstate highways), and residential uses. More specifically, the proposed project is located within the northern portion of the Central Terminal Area (CTA) of the airport. The project site consists of existing Terminals 2 and 3 (T2 and T3), including the concourse and ticketing buildings and adjacent apron areas. The LAX Plan,[12] the City of Los Angeles General Plan Land Use Element that governs uses on LAX, designates the project site as Airport Airside. The corresponding LAX Specific Plan[13] designates this area as LAX A Zone: Airport Airside Sub-Area. The proposed project improvements are consistent with the LAX Plan land use designation and with the allowable uses under the LAX Specific Plan.

The land use setting around the project site is generally characterized by LAX landside and airside uses, such as terminal buildings and gates, runways, taxiways, and aircraft apron areas to the north, east, and west; and the CTA, specifically roads, surface parking lots, and parking structures, to the south.

The closest land uses in the project vicinity that are not airport-related include the following:

- The City of Los Angeles communities of Westchester and Playa del Rey north of LAX;
- A mix of commercial, hotel, office, industrial, and residential uses east of LAX in the City of Los Angeles, City of Inglewood, and unincorporated community of Lennox;
- Residential, commercial, office, and institutional uses to the south of LAX in the City of El Segundo and the unincorporated community of Del Aire; and
- Dockweiler State Beach, the Pacific Ocean, and the Los Angeles/El Segundo Dunes to the west.

The Dunes Specific Plan Area, a designated Los Angeles County Significant Ecological Area, is located approximately 1.5 miles to the west of the project site, opposite Pershing Drive. There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan or other natural community conservation plan that includes the project site, the proposed construction staging areas, or the proposed construction contractor parking area. The proposed project site is not located within the Coastal Zone, which is approximately 1.5 miles to the west of the project site.

---

12 City of Los Angeles, Department of City Planning, LAX Plan, originally adopted December 4, 2004, last amended May 24, 2013. Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf, Accessed January 19, 2017.

13 City of Los Angeles, Department of City Planning, LAX Specific Plan, adopted by Los Angeles City Council December 14, 2004, last amended June 14, 2016. Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf, Accessed January 19, 2017.

The only unique resources located within the vicinity of the project site are three historical structures – the Theme Building, 1961 Air Traffic Control Tower, and Terminal 6 Sign Tower - as further discussed in Section 3.3.3 below. T3 also contains its original underground tunnel with mosaic tile murals connecting the original (1961) ticketing/baggage building to the oval shaped satellite building. Although Terminal 3 no longer retains sufficient integrity to be individually eligible for listing as a historic resource, the original underground tunnel with mosaic tile murals and the oval shaped satellite building would remain with implementation of the proposed project.

3.3 Environmental Setting

This section provides an overview of the existing environmental setting related to the proposed project and the topical issues evaluated in Chapter 4, *Environmental Impacts Analysis*, of this EIR. Additional information regarding existing conditions for these topics is provided in Chapter 4 of this EIR.

3.3.1 Air Quality

The airport is located within the South Coast Air Basin (Basin), a 6,745 square-mile area encompassing all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The Basin is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). At the federal level, the Basin is designated as a nonattainment area for ozone (O_3), fine particulate matter ($PM_{2.5}$), and lead (Pb).[14] At the State level, the Basin is designated as nonattainment for O_3, particulate matter (PM_{10}), and $PM_{2.5}$.[15] The existing air quality setting in the immediate vicinity of the project site is dominated by air quality pollutants from aircraft activities, vehicles on airport roads and surrounding roads and highways, and industrial uses. Other sources of existing air pollutant emissions on the airport include the Central Utility Plant (CUP), power generators, ground support equipment, and operations and maintenance activities.

3.3.2 Greenhouse Gas Emissions

The primary greenhouse gas (GHG) emission sources on and within the vicinity of the project site are emissions of carbon dioxide (CO_2) from combustion of fuels associated with aircraft operations, area traffic, and ongoing construction activities, as well as from building and lighting operations. Mobile and area sources and indirect emissions from energy and water use, wastewater, and waste management also contribute to GHG emissions at the project site.

3.3.3 Cultural Resources

Historical structures located in the vicinity of the proposed project site are: 1) Theme Building (eligible for National Register, listed in California Register, and a designated Los Angeles Historic Cultural Monument [HCM]), located in the center of the CTA, approximately 550 feet southeast of the proposed project site, opposite World Way; 2) the 1961 Air Traffic Control Tower (eligible for local listing as a City of Los Angeles HCM), located at the eastern entrance of the CTA, approximately 1,200 feet southeast of the proposed project site; and 3) Terminal 6 Sign Tower (eligible for local listing as a City of Los Angeles HCM), located approximately 1,020 feet southeast of the proposed project site. T3 also contains its original underground tunnel with mosaic tile murals connecting the original (1961) ticketing/baggage

[14] U.S. Environmental Protection Agency, Green Book Nonattainment Areas, Available http://www3.epa.gov/airquality/greenbk/index.html. As of May 24, 2016.

[15] California Air Resources Board, Area Designations Maps/State and National, Available: http://www.arb.ca.gov/desig/adm/adm.htm, Accessed January 19, 2017.

building to the oval shaped satellite building; however, neither T3 nor T2 were found eligible for historic listing and these terminals are not considered historical resources for the purposes of CEQA.[16]

The LAX Master Plan Final EIR identified 36 previously recorded archaeological sites within a radius of approximately two miles of LAX, including eight sites located on LAX property.[17] None of the eight sites identified on LAX property are located within the boundaries of the project site or in the immediate vicinity. The project site is a highly-disturbed area that has long been, and is currently being, used for airport uses. Any resources that may have existed on the site at one time are likely to have been displaced and, as a result, the overall sensitivity of the site with respect to buried resources is low.

The LAX property lies in the northwestern portion of the Los Angeles Basin, a broad structural syncline with a basement of older igneous and metamorphic rocks overlain by thick younger marine and terrestrial deposits. The older deposits that underlie the LAX area are assigned to the Palos Verdes Sand formation, which is one of the better known Pleistocene age deposits in southern California. The results of the records search conducted as part of the LAX Master Plan EIR indicate that the Palos Verdes Sand formation is a formation with a high potential for yielding unique paleontological deposits. The Palos Verdes Sand formation covers half of the LAX area, beginning at Sepulveda Boulevard and extending easterly beyond the airport.

The project site is developed with aviation-related uses, and the airport is located within a highly-urbanized area. Within the project area, traditional burial resources would likely be associated with the Native American group known as the Gabrieliño. Based on previous surveys conducted at LAX and the results of the record searches completed in 1995, 1997, and 2000 for the LAX Master Plan EIR, no traditional burial sites have been identified within the LAX boundaries or in the vicinity.[18]

3.3.4 Surface Transportation

The existing traffic setting is generally categorized by on- and off-airport traffic. Traffic is primarily a mix of private vehicles, buses, shuttles, taxis, limousines, LAWA vehicles, airline and airport employees, tenants, deliveries, and support services that operate within the CTA and on the local airport-area roadway network, including Century Boulevard, Sepulveda Boulevard, Aviation Boulevard, Lincoln Boulevard, Westchester Parkway, Imperial Highway, I-405, and I-105. Traffic levels and operating conditions on- and off-airport vary throughout the day, week and time of year, ranging from good to poor.

3.4 Development Setting

This subsection identifies past, present, and reasonably foreseeable probable future projects at/adjacent to LAX that could, in conjunction with the proposed project, result in cumulative impacts to the environment. These projects are listed in **Table 3-1** and identified in **Figure 3-1**. A description of each project is also provided in **Table 3-1**. Projects with construction schedules anticipated to overlap with the construction schedule for the proposed project are indicated in **bold** type. The projects listed in **Table 3-1** were considered in the cumulative impacts analysis for each resource analyzed in Chapter 4, *Environmental Impact Analysis*.

---

16 Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016, included in Appendix A of this EIR.

17 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements (SCH 1997061047), Section 4.9.1 – Historic/Architectural and Archaeological/Cultural Resources, April 2004, Available: http://www.lawa.org/ourlax/pastprojects.aspx?id=8844, Accessed January 19, 2017.

18 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements (SCH 1997061047), Section 4.9.1 – Historic/Architectural and Archaeological/Cultural Resources, April 2004, Available: http://www.lawa.org/ourlax/pastprojects.aspx?id=8844, Accessed January 19, 2017.

In addition, probable development projects in the City of Los Angeles and neighboring communities within the general vicinity of LAX are listed in **Table 3-2**. The list is based on consultation with representatives of various agencies including the City of Los Angeles Department of Transportation, City of Culver City, City of El Segundo, City of Hawthorne, City of Inglewood, and Los Angeles County.

Figure 3-1 illustrates the location of the projects in **Table 3-1** in relationship to the project site. Miscellaneous Projects and Improvements are not on the figure because they occur at multiple locations throughout the airport, nor is the Southern California Metroplex Aircraft Route and Airspace Management Structure Optimization (SoCal Project) shown, for the reasons indicated in **Table 3-1**.

Table 3-1
Development Projects At/Adjacent to LAX

	Project	Dates	Description
Past Projects			
1	Central Utility Plant Replacement Project (CUP – RP)	May 2011 – March 2015	Replacement CUP and related underground piping network within CTA.
2	Runway 6L-24R Runway Safety Area Improvements Project – North Airfield	June 2015 – Oct 2015	Improvements to Runway 6L-24R included implementation of declared distances to meet FAA Runway Safety Area (RSA) requirements. The Runway 6L-24R RSA Project also required the demolition and reconstruction of service roads and the relocation of the AOA fence and security gates.
Present Projects			
3	South Terminal Improvements	Nov 2011 – Dec 2018	Major interior improvements and building system upgrades within the South Terminal complex, particularly Terminal 5 and Terminals 6-8.
4	LAX Bradley West Project	Nov 2013 – Nov 2017	Replacement of existing concourses and aprons at the TBIT with new concourses and gates at Bradley West. Work includes demolition of existing TBIT concourses and installation of east gates/aprons along Bradley West concourses. Also includes Taxilane T project and construction of secure/sterile passenger and baggage connection between the TBIT core and Terminal 4. Although construction of a similar connection between TBIT core and Terminal 3 is also part of the overall Bradley West Project, it is broken out separately below (project 18), as its construction would not begin until after the majority of the Bradley West improvements are completed.
5	Terminal 1 Improvements	Aug 2014 – Dec 2018	Major interior improvements and building system upgrades to Terminal 1, including addition of floor space and reconfiguration of gates.
6	West Aircraft Maintenance Area Project	Aug 2014 – Jan 2018	The West Aircraft Maintenance Area (WAMA) project will allow for more efficient and effective maintenance of existing aircraft at LAX, including Aircraft Design Group (ADG) VI aircraft (Airbus A380s and Boeing 747-8s). The project includes aircraft parking and maintenance facilities, employee parking areas, and related storage, equipment, and facilities. The project will be able to accommodate up to 8 ADG VI aircraft simultaneously or 18 ADG III aircraft (aircraft similar in size to, and including, Boeing 737s). The first phase of the WAMA Project was completed in July 2016. The second phase of the WAMA Project (construction of an additional maintenance hangar) will be dictated by market conditions and is anticipated to be completed by 2018.
7	Runway 6R-24L Runway Safety Area Improvements Project – North Airfield	Aug 2015 – Nov 2016	Improvements to both ends of Runway 6R-24L, including an easterly shift of the runway and reconfigured taxiways to meet FAA RSA requirements. The Runway 6R-24L RSA Project also required the relocation of a security post and the taxicab holding/staging area.

Table 3-1
Development Projects At/Adjacent to LAX

	Project	Dates	Description
8	Runway 7L-25R Runway Safety Area Improvements Project – South Airfield	May 2016 – Nov 2017	Improvements at west end of Runway 7L-25R, including runway and connecting taxiway extensions to meet FAA RSA requirements. Rehabilitation of deteriorating concrete at east end of runway and Taxiway B.
9a	Metro Crenshaw/LAX Transit Corridor Project	Jan 2015 – 2019	The Los Angeles County Metropolitan Transportation Authority (Metro) is constructing the Crenshaw/LAX Transit Corridor Project, which includes an 8.5-mile light-rail transit line that will connect the existing Metro Green Line and the Metro Expo Line at Crenshaw and Exposition Boulevards. As part of this project, a station is being constructed in proximity to LAX near the intersection of Century Boulevard and Aviation Boulevard.
9b	Airport Metro Connector (AMC) 96th Street Transit Station	2020 - 2023	Metro will be constructing a new multi-modal transportation center at 96th Street and Aviation Boulevard to connect LAX to the regional bus and transit system. Components of the AMC Station include three at-grade light rail transit (LRT) platforms, bus plaza, bicycle hub, pedestrian plaza, passenger vehicle pick-up and drop-off area and Metro transit center/terminal building ("Metro Hub") to connect passengers between the multiple transportation modes.
10	LAX Midfield Satellite Concourse (MSC) North Project	April 2015 – Nov 2019	The MSC North Project consists of a satellite concourse west of TBIT that would include up to 12 aircraft gates that could accommodate ADG V and ADG VI aircraft. The MSC North Project includes associated apron areas, a new crossfield taxiway, a taxilane, and provisions for an underground tunnel.
11	Hyperion Treatment Plant Connector	Aug 2016 – Aug 2017	This project will provide a connection from LAWA's existing retention basin within the southwest portion of LAX to the existing North Central Outfall Sewer (NCOS) interceptor that runs within LAWA property and is connected to the Hyperion Treatment Plant (HTP). The purpose of this connection is to convey the stormwater flow from LAWA's Imperial and Pershing subdrains (approximately 1,200 acres) to the HTP, to help LAWA comply with the City's Low Impact Development and Industrial General Permit requirements. Improvements include construction of an approximately 4'-diameter connection to the NCOS, and installation of pumps and related electrical and mechanical equipment.
N/A	Miscellaneous Projects and Improvements	Jan 2014 – July 2020	LAWA will undertake a wide variety of smaller miscellaneous projects and improvements mostly related to repair/replacement of, and upgrades to, existing facilities at LAX, including, but not limited to, runway repair/rehabilitation; elevators/escalators replacement; CTA second level roadway repairs; terminal taxilanes and aprons rehabilitation; passenger boarding bridge replacements; terminal electrical, plumbing, and facilities upgrades; miscellaneous demolition; and other improvements.
12	Terminal 2 Improvements	Jan 2014 – Jan 2018	Major interior improvements and building system upgrades to Terminal 2.
15	Terminal 3 Improvements	Nov 2015 – Nov 2016	Minor interior improvements to implement regulatory upgrades in Terminal 3.
Probable Future Projects			
13	Runway 7R-25L Rehabilitation	Sep 2017 – Dec 2018	Reconstruction of runway pavement.
14	LAX Northside Development	April 2016 – June 2025	The Northside Development will transform approximately 340 acres of under-utilized land on the north side of the airport to better serve LAWA and the local communities of Westchester and Playa del Rey.

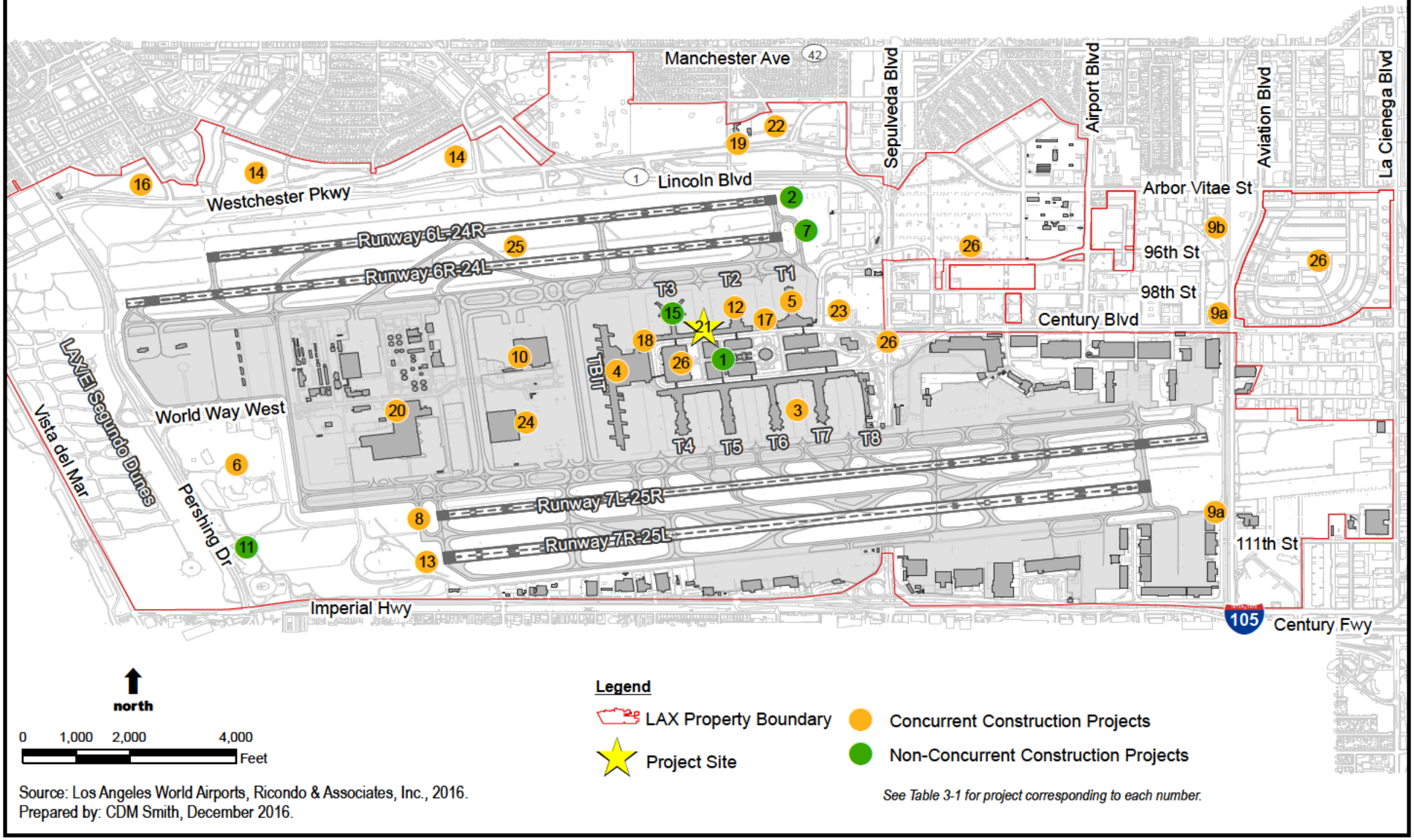
Table 3-1
Development Projects At/Adjacent to LAX

	Project	Dates	Description
16	Argo Drain Sub-Basin Stormwater Infiltration and Treatment Facility	March 2017 – April 2019	Also referred to as the Westchester Stormwater Best Management Practices Project, this project would develop a 22-acre stormwater infiltration facility north of Westchester Parkway and east of Pershing Drive that would treat both City of Los Angeles and LAWA stormwater flows from the Argo watershed.
17	Terminal 1.5	June 2017 – July 2019	Terminal 1.5 would be constructed between existing Terminal 1 and Terminal 2 to provide additional passenger processing facilities for the north passenger terminals.
18	Terminal 3 Connector	Oct 2017 – Sep 2019	The Terminal 3 connector would provide a passenger connection between TBIT and Terminal 3 on the north side, similar to the Terminal 4 connector.
19	Canine Facility	Jan 2018 – Jan 2019	New canine facility for the Airport Police Department as part of the LAX Northside Development.
20	Secured Area Access Post (SAAP) Project	October 2017 – April 2020	Construction of a fully functional and all-encompassing access point onto the AOA on the west side of LAX. This will be the sole SAAP on World Way West to replace Post 5, which was taken out of service by the Midfield Satellite Concourse (MSC) project, and Post 21, which will be taken out of service by Phase 2 of the WAMA project. The proposed location of the new SAAP is parallel to, and south of, World Way West, near where the road will terminate at Coast Guard Road once the MSC is completed.
21	Terminals 2 and 3 Modernization Project [Proposed Project]	October 2017 – Dec 2023	Proposed Project - Chapter 2, *Project Description*, provides a detailed description of the Terminals 2 and 3 Modernization Project.
22	Airport Security Buildings	Jan 2019 – Jan 2021	Relocation of LAWA Police Department building to LAX Northside, which will include a shooting range.
23	Concourse 0	April 2019 – March 2023	Concourse 0 would be constructed to the east of Terminal 1, in the current location of the Park One surface parking lot. Concourse 0 would provide up to 660,000 square feet of floor space, including 11 aircraft gates.
24	MSC South Project	2020 - 2025	The MSC South concourse would be constructed on the south end of the MSC North concourse in order to provide up to 18 additional aircraft gates. The facility would provide approximately 560,000 square feet of floor space.
N/A	Southern California Metroplex Aircraft Route and Airspace Management Structure Optimization (SoCal Project)	Proposed implementation in Fall of 2016	The FAA SoCal Project seeks to improve the efficiency of airspace in the Southern California Metroplex by optimizing aircraft arrival and departure procedures at Southern California airports. The FAA project may involve changes in aircraft flight paths and altitudes in certain areas, but would not result in any ground disturbance or increase the number of aircraft operations within the Southern California airspace. FAA published a final Environmental Assessment and Finding of No Significant Impact for the SoCal Metroplex project in 2016.
25	North Airfield Improvements	July 2019 - 2025	Improvements to the north airfield could include installation of high-speed taxiways, improvements to existing taxiways, installation of runway status lights, and other safety improvements, including land use compatibility projects with existing Runway Protection Zones.
26	LAX Landside Access Modernization Program	end of 2017 – Dec 2035	Improvements within and east of the CTA to: improve access options and the travel experience for passengers; provide a direct connection to the Metro transit system; provide easier and more efficient access to rental cars; relieve congestion in the CTA and on the surrounding street system; and improve the efficiency and operation of the transportation system serving LAX. The program components include an automated people mover (APM) system,

Table 3-1
Development Projects At/Adjacent to LAX

	Project	Dates	Description
			Intermodal Transportation Facilities (ITFs), a Consolidated Rental Car Facility (CONRAC), pedestrian walkway connections to the passenger terminals within the CTA, and roadway improvements.

Notes:
Projects shown in **bold** are anticipated to be under construction concurrent with the LAX Terminals 2 and 3 Modernization Project.
Sources: LAWA, Ricondo & Associates, Inc., 2016.



Source: Los Angeles World Airports, Ricondo & Associates, Inc., 2016.
Prepared by: CDM Smith, December 2016.

LAX Terminals 2 and 3 Modernization Project	**Development Projects At/Adjacent to LAX**	Figure **3-1**

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
City of Los Angeles			
1	Mixed-use: office and retail	11955 W. Washington Blvd.	Mixed-use with 41,000 square feet (sq. ft.) office and 9,500 sq. ft. retail. Existing vacant building to be removed.
2	Mixed-use: apartment and retail	9901 Washington Blvd.	131-unit apartment and 12,000 sq. ft. retail. Existing 16,900 sq. ft. retail to be removed.
3	Mixed-use: apartment, office, retail, and restaurant	10601 Washington Blvd.	126-unit apartment, 23,000 sq. ft. office, 9,000 sq. ft. retail, 9,000 sq. ft. restaurant. Existing 10,000 sq. ft. office to be removed.
4	Mixed-use: condominium and retail	3115 S. Sepulveda Blvd.	175-unit condominium and 28,000 sq. ft. retail. Existing 28,000 sq. ft. discount store to be removed.
5	Condominiums	11131 Rose Ave.	227-unit condominium. Existing 89-unit apartment to be removed.
6	Mixed-use: apartment and retail	3425 Motor Ave.	115-unit apartment and 975 sf retail. Existing 15 apartment units, 2 single-family dwellings and 3,300 sq. ft. office to be demolished.
7	Hotel and restaurant project	305 Ocean Front Walk	24-room hotel and 2,000 sq. ft. high-turnover restaurant.
8	Restaurant and retail	10612 National Blvd.	1,726 sq. ft. coffee shop (Coffee Bean) including 250 sq. ft. for outdoor seating. Existing vacant lot.
9	Los Angeles Department of Public Works (LADPW) Maintenance Yard	3233 Thatcher Ave.	Improvement/expansion of the existing LADPW maintenance yard plus addition of 30 new employees to site.
10	Apartment	7280 W. Manchester Ave.	126-unit apartment in-lieu of 24,000 sq. ft. retail space of the previously approved/entitled Decron mixed-use development.
11	Proposed airport parking	6225 W. Century Blvd.	Construct a 1,726-stall airport parking facility with shuttle bus service.
12	Mixed-use: apartment, retail, and restaurant	6719 Pacific Ave.	Mixed-use 35-unit townhomes, 2,000 sq. ft. specialty retail and 2,000 sq. ft. restaurant uses.
13	Mixed-use: condominium and retail	138 Culver Blvd.	Mixed-use with 72-unit condominium, 13,000 sq. ft. retail space and 1,500 sq. ft. restaurant.
14	Metro Bus Facility	10701 S. La Cienega Blvd.	Metro bus facility at LAX parking lot B (on 23.1-acre parcel).
15	Loyola Marymount University (LMU) Master Plan	1 LMU Dr.	Increase enrollment capacity to 7,800 students.
16	Car wash	9204 Airport Blvd.	15,000 sq. ft. car wash to replace existing rental car facility.
17	Starbucks	12404 Venice Blvd.	2,195 sq. ft. Starbucks coffee shop. Existing 2,800 sq. ft. specialty retail to be replaced.
18	Residential and retail	580 Venice Blvd.	5-unit residential and 5,700 sq. ft. retail space.
19	Apartment	4100 Del Rey Ave.	77-unit apartment building.
20	Restaurant	1020 W. Venice Blvd.	Proposed House of Pies sit-down restaurant (3,895 sq. ft.).
21	Mixed-Use: apartment and office	4140 S. Glencoe Ave.	New 4-story, 67-unit apartment, and 3,211 sq. ft. office building over 2-level parking garage.
22	Mixed-Use: apartment and retail	7407 S. La Tijera Blvd.	New 140-unit apartment and 2,600 sq. ft. retail.
23	Mixed-Use: hotel, retail, and restaurant use	1027 S. Abbot Kinney Blvd.	New 92-guest room hotel, 3,000 sq. ft. retail, and 2,072 sq. ft. restaurant.
24	Apartment	4090 S. Del Rey Ave.	New 4-story, 51-unit apartment building over 3-level parking garage.
25	Mixed-use: condominium and office	4210 S. Del Rey Ave.	Proposed 136-unit condominium and 20,000 sq. ft. commercial office.
26	Fast food restaurant with drive-through	8521 S. Sepulveda Blvd.	New 3,999 sq. ft. Chick-fil-A fast food with drive-through.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
27	OTIS College of Arts & Design	9045 S. Lincoln Blvd.	Relocation and consolidation of existing OTIS College campus students, faculty, and staff.
28	Mixed-Use: condominium and office	4091 S. Redwood Ave.	67-unit condominium and 7,525 sq. ft. commercial office building providing 141 parking spaces.
29	Apartment	3822 S. Dunn Dr.	7-story, 86-unit apartment building over ground floor parking garage.
30	Office	12777 W. Jefferson Blvd.	Commercial office expansion (49,950 sq. ft.).
31	Apartment	8740 S. La Tijera Blvd.	New 137-unit apartment building to replace existing Westchester Secondary Charter School.
32	Coffee shop with drive-through	9829 W. Venice Blvd.	Coffee Bean & Tea Leaf coffee shop with single-lane drive-through to replace existing Rally's with dual-lane drive-through.
33	Mixed-Use: apartment, grocery store, retail, and restaurant	3221 S. La Cienega Blvd.	Converting existing ABC Lot to 1,218-unit apartment, grocery store, retail and restaurant project.
34	LAUSD Elementary School	2224 S. Walgrove Ave.	New 567-Student Elementary School (K-5).
35	Coffee Shop without drive-through	8400 S. Lincoln Blvd.	Starbucks coffee shop (without drive-through) within shopping center (1,652 sq. ft.).
36	Mixed-use: apartment, mini-warehouse, and office	4040 S. Del Rey Ave.	New 195-unit apartment, 15,000 sq. ft. office, and 80,000 sq. ft. mini-warehouse; or 235-unit apartment and 15,000 sq. ft. office.
37	Mixed-use: residential, retail, and office	601 S. Ocean Front Walk	5,254 sq. ft. retail and 22,738 sq. ft. office.
38	Marina Island mixed-use: apartment and office	5000 S. Beethoven St.	156-unit apartment and 33,484 sq. ft. office.
39	Mixed-use: apartment and automotive dealership	5748 S. Mesmer Ave.	New 400-unit apartment and 250,000 sq. ft. automotive dealership (West LA Hooman) - 5 auto dealers.
40	Coffee without drive-through	3006 S. Sepulveda Blvd.	Proposed 2,023 sq. ft. Starbucks coffee shop without drive-through within shopping center.
41	Mixed-use: apartment and restaurant	3644 S. Overland Ave.	New 92-unit apartment and 1,573 sq. ft. restaurant use (including 110 parking spaces).
42	Bakery with retail and restaurant	320 E. Sunset Ave.	Change of use from 4,675 sq. ft. commercial office to 6,000 sq. ft. bakery/retail/restaurant.
43	Mixed-use: condominium and retail	4363 S. Lincoln Blvd.	Proposed 10-Story, 80-unit condominium and 15,100 sq. ft. supermarket.
44	Hotel	9800 S. Sepulveda Blvd.	Change of use from 118,490 sq. ft. office (9-story building) to 178-guest room hotel with restaurant and spa (The "O" Hotel).
45	Mixed-use: residential and retail	13488 W. Maxella Ave.	The Villa Marina: 244-unit condominium and 9,000 sq. ft. retail.
46	Sterling West School	5206 W. Thornburn St.	New 50-student private school (Grades 3-12).
47	Ballona Wetlands Ecological Reserve Restoration Project	Ballona Wetlands	Restoration of wetlands/ecological reserve, 600-acres.
48	Mixed-use project	Corner of Venice Blvd./National Blvd.	Construct 8-story mixed-use project. (Uses and sizes to be determined)
49	Playa Vista Phase I	Jefferson Blvd. b/t Lincoln Blvd. and Centinela Ave.	1,570,000 sq. ft. office use, 25,000 sq. ft. retail use, and 65,000 sq. ft. community serving use.
50	Playa Vista Plant Site (Spruce Goose)	Campus Center Dr./Bluff Creek Dr.	1,129,900 sq. ft. production and staging support, and 572,050 sq. ft. office use.
51	The Village at Playa Vista (Phase II)	s/o Jefferson Blvd./Westlawn Ave.	175,000 sq. ft. office use, 150,000 sq. ft. retail use, and 40,000 sq. ft. community serving uses.
Culver City			
52	Office building (Entrada)	6161 W. Centinela Ave.	342,000 sq. ft. 13-story office building to replace existing surface parking lot.
53	Mixed-use: apartment, retail, and	11960 W. Washington Blvd.	98-unit apartment, 11,250 sq. ft. specialty retail, and 3,750 sq. ft. quality restaurant.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
	restaurant		
54	Residential	4025 Grand View Blvd.	36 townhome rental units.
55	Commercial/residential	11924-11960 Washington Blvd.	Mixed-use with 13,000 sq. ft. commercial, 48 dwelling units in Culver City and 49 dwelling units in L.A. City, tandem parking.
56	Residential	3837 Bentley Ave.	Addition of 3 new attached condominiums (net addition of two units).
57	Auto repair shop at existing dealership	6002 Centinela Ave.	Three new buildings totaling 26,284 sq. ft.
58	Tandem parking, commercial	10799 Washington Blvd.	Tandem parking for new 2,000 sq. ft. commercial building.
59	Restaurant	12608 Washington Blvd., Suite B	Addition of outdoor dining and liquor license for new restaurant use.
60	Vehicle repair shop	4215 Sepulveda Blvd.	2,068 sq. ft. vehicle maintenance/repair shop with 3 bays.
61	Extended Stay Hotel	5990 Green Valley Circle	New 10-story, 115 ft. tall, 163-room Extended Stay Hotel.
62	Office and production services building (Sony) and parking addition	10202 Washington Blvd.	New 8-story 218,450 sq. ft. office and 4-story 51,716 sq. ft. production services building and "Culver" parking structure expansion to add 1,328 new parking spaces.
63	Residential	4109-4111 Duquesne Ave.	Addition of 2 residential units to existing duplex.
64	Residential and chapel	10775 Deshire Pl.	4,740 sq. ft. addition to existing dormitory and replace existing chapel with 1,660 sq. ft. chapel.
65	Residential	3440 Caroline Ave.	Two new detached condominium units (net addition of one unit).
66	Office (Sony)	10202 Washington Blvd.	New 22,929 sq. ft. 4-story office (net new area = 9,758 sq. ft.).
67	Museum	10808 Culver Blvd.	Conversion of 12,596 sq. ft. armory building into a museum.
68	Parking - industrial	5844 Perry Dr.	Tandem parking for 2,982 sq. ft. industrial building.
69	Restaurant	11198 Washington Pl.	New 3,850 commercial building and outdoor dining (spec for future tenant).
70	Creative office	700 Corporate Pointe	Modification of approved site plan to construct a 281,000 sq. ft. 7-story creative office building and 9-story parking structure.
71	Commercial - car wash	11197 Washington Pl.	Drive-through car wash at existing Chevron gas station.
72	Commercial	11215 Washington Blvd.	5,492 sq. ft. addition to Mazda dealership.
73	Commercial/retail	5450 Sepulveda Blvd.	New 14,000 sq. ft. commercial/retail building.
74	TOD	8770 Washington Blvd.	Planned Development/TOD mixed-use with 31,240 sq. ft. retail/restaurant and 115 2-story residential units.
75	Commercial	11281 Washington Pl.	New retail with 6,294 sq. ft. and 25 parking spaces.
76	TOD	8810-8850 Washington Blvd. and 3920 Landmark St.	Planned development/TOD mixed-use with 38,732 sq. ft. office and 41,745 sq. ft. retail/restaurant.
77	Residential/commercial	11957 Washington St.	30 residential units with 8,682 sq. ft. retail.
78	Residential/commercial	12712-12718 Washington Blvd.	4-story with 5 units (11,516 sq. ft.), 3,414 sq. ft. retail, plus subterranean parking.
79	Parking structure and retail	8511 Warner Dr.	5-level parking structure (307,522 sq. ft.) and 51,520 sq. ft. retail/restaurant.
80	Willows School Comprehensive Plan	8509 Higuera St. 8476 Warner Dr.	Phase 1: New surface parking, increased student enrollment by 50 from 425 to 475. Phase II and III: Increase student enrollment by 100.
81	Condominium	4139-4145 Duquesne Ave.	7-unit condominium with 15 subterranean parking.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
82	Mixed-use development	11042-11056 Washington Blvd.	3-story mixed-use development (48,500 sq. ft.) with 106 parking spaces (ground level and subterranean).
83	Brotman Medical Center	3828 Hughes Ave.	Redevelop Brotman Medical Center to a 5-level residential care facility for the elderly with 232 units.
84	Culver Studios - office/support	9336 Washington Blvd.	Net increase of 138,997 sq. ft. of office and support facilities.
85	Auto repair	11304 Culver Blvd.	New auto repair facility.
86	Mixed-use building	9355 Culver Blvd.	3-story mixed-use building consisting of a ground level gallery, second story office, and one apartment unit on third floor.
87	Office building	13110 Washington Blvd.	Adding 1,032 sq. ft. to an existing building for a total 2,500 sq. ft.
88	Office and warehouse	6029 Slauson Ave.	Adding 14,868 sq. ft. to existing office and warehouse building for a total 64,055 sq. ft.
89	Office and retail	11012-11014 Washington Blvd.	3,385 sq. ft. 2-story office and retail building.
90	Commercial and condominium building	12803 Washington Blvd.	37,308 sq. ft. 3-story commercial (office & retail) and condominium building.
91	Vehicle repair shop	11167 Washington Blvd.	New vehicle repair shop.
92	Office building	5800 Uplander Way	Adding 49,881 sq. ft. to existing 26,124 sq. ft. office building for a total 76,095 sq. ft.
93	Office building	9919 Jefferson Blvd.	113,467sq. ft. 3-story office building.
94	Office building	8665 Hayden Ave.	Construct new 62,765 sq. ft. office building.
95	Mixed-use: retail and office	4043 Irving Pl.	28 residential condominium units and 1,403 sq. ft. office space.
96	Condominium	4058 Madison Ave.	New 4-unit condominium.
97	Condominium	3862 Huron Ave.	New 5-unit condominium.
98	Condominium	4228 Madison Ave.	New 2-unit condominium.
99	Condominium	4014 Van Buren Pl.	4 new residential condominiums.
100	Fueling station	10638 Culver Blvd.	Expand mini-mart and add new automatic car wash at existing fueling station.
101	Condominium	13340 W. Washington Blvd.	41-unit condominium with 35 condominiums in Los Angeles and 6 live-work units in Culver City.
102	Mixed-use project	8777 Washington Blvd.	Construct 80 apartments, 9,989 sq. ft. retail, 5,444 sq. ft. restaurant, and 29,399 sq. ft. office. Demo 13,000 sq. ft. retail and 3,500 sq. ft. restaurant/café.
103	Market Hall Project	12405 Washington Blvd.	Construct 10,187 sq. ft. retail, 11,385 sq. ft. specialty retail, and 11,663 sq. ft. restaurant uses.
104	Indoor batting cage facility	3609 Hayden Ave.	New indoor batting practice facility in an existing industrial space.
105	Triangle Site - Washington/National TOD	Corner of Washington Blvd./National Blvd.	Transit oriented development to include 200 mid-rise apartments, 148-room hotel, 201,000 sq. ft. office, 24,000 sq. ft. specialty retail, 10,000 sq. ft. of high-turnover restaurant, and 10,000 sq. ft. quality restaurant.
106	Office and retail project	10000 Washington Blvd.	Construct new stand-alone 3,115 sq. ft. one-story building and additional 5,500 sq. ft. to existing 338,876 sq. ft. office building. Ground level space to be converted from office to retail.
City of El Segundo			
107	Raytheon Campus Specific Plan Office Park Expansion	2100 El Segundo Blvd.	2,089,000 sq. ft. existing with 2,142,457 sq. ft. office park expansion (4,231,547 sq. ft. total).

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
108	Smoky Hollow Plan	225 Oregon St.	Develop Specific Plan to revitalize Smoky Hollow Industrial District
109	Hotel	888, 892, and 898 N. Sepulveda Blvd.	5-story, 190-room, 107,090 sq. ft. hotel on vacant parcel and Airport Park and Ride facility on existing 840-space parking structure.
110	Convert existing warehouse to office	2265 E. El Segundo Blvd.	Convert 3,050 sq. ft. existing warehouse to office use.
111	Rock and Brew Restaurant expansion	139-147 Main St.	Expansion/remodel to increase outdoor dining from 2,205 sq. ft. to 3,333 sq. ft., plus one stall parking reduction.
112	2014-2021 Housing Element Plan	Citywide	Update to Housing Element Plan.
113	Toppings Pizza	2161 E. El Segundo Blvd.	Admin Use Permit for a restaurant that is described as "new."
114	Wiseborn School District H.S.	201 N. Douglas	335,000 sq. ft. total for new high school after demo of 90,000-170,000 sq. ft. New high school to contain 180,000 to 240,000 sq. ft. of building area.
115	Convert parking to hotel	199 Continental Blvd.	71,000 sq. ft. 152-room hotel; demolish existing parking lot.
116	Condominium	711 Main St.	Current 2-unit 2,758 sq. ft. residential to be expanded to 4-unit with 6,963 sq. ft.
117	Office	400 Duley Road	67,000 sq. ft. office on vacant parcel.
118	Hotel addition	525 N. Sepulveda	Add 6,952 sq. ft. to 98,548 sq. ft. existing hotel.
119	Industrial addition	750 S. Douglas	Add 4,986 sq. ft. to existing 15,076 sq. ft. industrial building.
120	Corporate office and athletic training facility	2275 Mariposa Ave.	New 52,000 sq. ft. corporate office plus 68,380 sq. ft. athletic training facility (120,380 sq. ft. total).
121	New office	500 S. Douglas and 2330 Utah Ave.	New 78,000 sq. ft. office to replace existing 52,000 sq. ft. industrial use.
122	Office	123 Nevada St.	New 4-unit commercial office condominium converted from 1,700 sq. ft. industrial.
123	Office and private hotel	2125 Campus Dr.	121,450 sq. ft. hotel and 63,550 sq. ft. office replacing vacant land.
124	Office (Boeing S-50 Building Addition)	1700 E. Imperial Ave.	Addition of 86,521 sq. ft. to existing 169,390 sq. ft. building.
125	Condominium	535 Indiana St.	4-unit condominium to replace 1 single-family residence.
126	Data center / office	445 N. Douglas St.	106,000 office and 117,000 warehouse industrial data center (223,000 sq. ft. total).
127	Mixed-use	2350 E. El Segundo Blvd.	1,740 sq. ft. office; 75,000 sq. ft. retail; 7,000 sq. ft. child care center; 7,000 sq. ft. medical/dental office; 19,000 sq. ft. health club; 75,000 sq. ft. restaurant; 100-room hotel; 25,000 sq. ft. light industrial; 75,000 sq. ft. research and development; and 65,000 sq. ft. technology/telecommunications.
128	El Segundo Corporate Campus	710 N. Nash St.	611,545 sq. ft. office plus 13,660 sq. ft. retail on currently vacant parcel.
129	Office	1950 E. Grand Ave.	93,569 sq. ft. office.
130	Medical office	1700 E. Grand Ave.	80,050 sq. ft. medical office and 24.930 sq. ft. office.
131	Hotel	101 Continental Blvd.	167-room hotel.
132	Industrial uses	215 California St.	82,429 sq. ft. industrial uses.
133	Data Center / Office	444 N. Nash St.	Demolish 11,769 sq. ft. and construct 75,435 sq. ft. for new total 180,422 sq. ft. data center.
134	LA Air Force Base - Area A	SE Aviation Blvd.	525-unit condominium, remove existing 835,000 sq. ft. office.
135	Hotel	1960 E. Grand Ave.	150-room hotel.
136	Residential	425-429 Indiana St.	8 residential units.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
137	Condominium	616-620 W. Imperial Hwy	12-unit condominium.
138	Condominium	301, 303, 305 W. Palm Ave.	7-unit condominium, remove existing 9-unit apartment.
139	Plaza El Segundo	NE Sepulveda Blvd.	425,000 sq. ft. retail shopping center.
140	Mattel Grand Way Project - Phase II	455 Continental Blvd. and 1955 E. Grand Ave.	New 14-story 300,000 sq. ft. research and development office tower and 810-space +55,000 sq. ft. parking structure (355,000 sq. ft. total).
141	Shopping center	820 - 850 S. Sepulveda Blvd.	71,343 sq. ft. shopping center plus 25,627 sq. ft. restaurant and 27,338 office use.
142	Walgreens	NE Sepulveda Blvd.	67,000 sq. ft. retail.
143	Parking structure	525 N. Sepulveda Blvd.	1,029 space 328,532 sq. ft. parking structure.
144	Office/industrial condo project	222 Kansas St.	55-unit 89,249 sq. ft. office/industrial condominium, existing 93,473 sq. ft.
145	Mixed-use commercial	141 Main St.	12,550 sq. ft. mixed-use commercial.
146	Warehouse, office, manufacturing	900, 950 Sepulveda Blvd. & 960, 901 - 915 Selby St.	20,819 sq. ft. warehouse, 139,558 sq. ft. office, and 14,025 sq. ft. manufacturing from existing 80,165 sq. ft. warehouse, 72,084 sq. ft. office, and 2,554 sq. ft. manufacturing.
147	Lifeguard station	105 Vista del Mar	1,400 sq. ft. lifeguard station.
148	Senior assisted living facility	540 E. Imperial Hwy.	304 senior housing residential units or 58 single and multi-family (175,000 sq. ft.); previously 22,500 sq. ft. school.
149	Indoor ice rink	555 N. Nash St.	17,315 sq. ft. indoor ice rink.
150	Office	116 W. El Segundo Blvd.	38,000 sq. ft. office.
151	In-N-Out Burger Fast-food Restaurant with drive-through	600-630 N. Sepulveda Blvd.	Existing Sizzler (sit-down dining) to become 3,714 sq. ft. fast-food restaurant with drive-through.
City of Manhattan Beach			
152	Walgreens	2400 N. Sepulveda Blvd.	15,000 sq. ft. retail.
153	Mixed-use retail, office, and coffee shop	1000 N. Sepulveda Blvd.	23,000 sq. ft. medical office, 700 sq. ft. pharmacy, 1,700 sq. ft. coffee shop; remove 5,400 sq. ft. restaurant.
154	Mixed-use office and retail	222 N. Sepulveda Blvd.	12,000 sq. ft. office and 1,000 sq. ft. retail; remove existing 5,000 sq. ft. auto repair.
155	Rite-Aid	1100 Manhattan Beach Blvd.	13,000 sq. ft. retail; remove 8,600 sq. ft. office.
156	Bank and retail	1129 N. Sepulveda Blvd.	4,000 sq. ft. bank and 2,000 sq. ft. retail.
157	Retail space	1700 Rosecrans Ave.	10,000 sq. ft. retail; replace existing 10,000 sq. ft. warehouse.
158	Gas station w/ mini-mart	1002 Manhattan Beach Blvd.	Expand and remodel 1,785 sq. ft. gas station with mini-mart to 2,400 sq. ft.
159	Bank	400 Manhattan Beach Blvd.	Remodel existing 5,590 sq. ft. bank to 5,680 sq. ft.
160	Manhattan Beach County Library	1320 Highland Ave.	New 21,500 sq. ft. library; demolish existing 12,300 sq. ft.
161	Manhattan Academy	1826 Manhattan Beach Blvd.	Convert building to private school; 4,517 sq. ft. classrooms and 1,595 sq. ft. play area.
162	Manhattan Village Mall	3200 N. Sepulveda Blvd.	Retail shopping center; 3 component 124,000 sq. ft. expansion.
163	Chevron	Aviation Blvd.	New 5,180 sq. ft. foodmart, carwash, and gas station
164	Louie Tomaro Office	2617 N. Sepulveda Blvd.	New 8,800 sq. ft. office; demolish 2 houses.
165	Manhattan Beach Work Lofts	1300 Highland Ave.	15,000 sq. ft. commercial/office condominiums in former Good Stuff.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
166	Mixed-use building	3912 Highland Ave.	New 1-unit condominium and 700 sq. ft. medical office; demolish 1 apartment and 400 sq. ft. retail.
167	Chalk Preschool	1030 Manhattan Beach Blvd.	Demolish 4,380 sq. ft. office and add 6 classrooms totaling 4,191 sq. ft.
City of Lawndale			
168	Lawndale Annex	14900 Aviation Blvd.	290-unit condominium.
City of Inglewood			
169	Condominiums	940 North Cedar St.	14-unit condominium.
170	Condominiums	448 North Edgewood St.	6-unit condominium.
171	Condominiums	417- 420 N. Market St.	12-unit condominium.
172	Condominiums	450 N. Market St.	12-unit condominium.
173	Condominiums	912 S. Myrtle Ave.	7-unit condominium.
174	Condominiums	927 South Osage Ave.	7-unit condominium.
175	Condominiums	222 W. Spruce Ave.	10-unit condominium.
176	Mixed retail/restaurant	Florence Ave. and La Brea Ave., SE corner	49,800 sq. ft. mixed retail/restaurant.
177	Mixed retail/restaurant	Southwest corner of Century/Prairie (Haagen)	97,490 sq. ft. mixed retail/restaurant.
178	Residential	704 N. Market St.	6-unit residential.
179	Senior center and housing	111 N. Locust St.	95,188 sq. ft. senior center and housing.
180	Shopping center	11441 S. Crenshaw Blvd. at Imperial Highway	101,323 sq. ft. shopping center.
181	Shopping center	433 North Centinela Ave.	7,384 sq. ft. shopping center.
182	Shopping center	10922 South Prairie Ave.	8,416 sq. ft. shopping center.
183	Charter school	2930 W. Imperial Hwy.	Convert office space to charter school.
184	Apartments	125 E. Spruce Ave.	7 new apartment units with semi-subterranean parking.
185	School	11161 S. Crenshaw Blvd.	Interior, exterior, and parking lot improvements to convert a medical office building into a school.
186	Office/warehouse building	234 S. Hindry Ave.	New 19,839 sq. ft. office/warehouse building with 49 parking spaces on an M-1 zoned property.
187	Commercial building	3000 W. Century Blvd.	New 14,000 sq. ft. commercial building.
188	Gas station	8307 S. La Cienega Blvd.	New 3,636 sq. ft. structure (mini-market and retail space) at an existing gas station.
189	Community center	1201 S. La Tijera Blvd.	Convert an abandoned service station into a community center with a mini park.
190	Banquet hall	206 S. Locust St.	4,268 sq. ft. event, dance, and banquet hall.
191	Townhomes	333 N. Prairie Ave.	310 townhome units at the former Daniel Freeman site.
192	Shopping center	1740 N. Centinela Ave.	Construct 5,460 sq. ft. shopping center.
193	Middle school	3600 W. Imperial Hwy.	New two-story 10 classroom building for Environmental Charter School (middle school) at Concordia Lutheran Church, increasing student population from 200 to 480 students.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
194	Office building	323 N. Prairie Ave.	Parking requirement reduction at medical office building.
195	Townhomes	501 E. 99th St.	Two 6-unit townhouse-style condominiums with 24 resident and 4 guest parking spaces.
196	Starbucks with drive-through	601 W. Manchester Blvd.	Develop drive-through Starbucks restaurant with outdoor seating.
197	Office building	301 N. Prairie Ave.	Reduce required parking supply for medical office building.
198	Townhomes	573 1/2 E. Hyde Park Pl.	Construct three townhomes with 6 enclosed parking spaces.
199	Manufacturing/warehouse	234 W. Hyde Park Blvd.	Construct new 140,185 sq. ft. manufacturing/warehouse building including 7,500 sq. ft. of office space.
200	Restaurant	524 W. Manchester Blvd.	Demolish existing structure currently operating as a sit down restaurant and construct a new 2,008 sq. ft. 2-story building with 14 parking spaces. No beer, wine or liquor is being served or proposed.
201	Centinela Hospital Expansion	555 W. Hardy St.	1. West Tower Upgrades: Remodel of the main building entrance and the south elevation and seismic upgrades in compliance with SB 1953. 2. Electrical Upgrade: A campus-wide electrical upgrade that includes construction of a new 5,900 sq. ft. repair shop building and 4,200 sq. ft. electrical yard with three emergency generators and a 16,000 gallon underground fuel tank for 72 hour emergency power at the northeast corner of the campus on Flower Street. 3. Emergency Department: A new 2,400 sq. ft. addition and redesigned front entrance to the Emergency Department including new admitting, triage, and waiting areas, and expanding the capacity of the Emergency Department by eight beds (total of 52 beds). 4. Loading and Delivery Areas: Demolition of two buildings (totaling 6,200 sq. ft.), partial demolition of a 4,670 sq. ft. building, addition or rehabilitation of various buildings, and relocation of the delivery and loading areas from the emergency room area to the rear of the campus.
202	Hollywood Park Mixed-Use Project	1050 S. Prairie Ave.	Option 1 (Original HP Specific Plan): 2,995 dwelling units; 620,000 sq. ft. retail; 75,000 sq. ft. office; 300-room hotel; 120,000 sq. ft. casino; and 25 acres open space. Option 2: 80,000 seat sports stadium; 6,000 seat performance venue; 2,500 dwelling units; 890,000 sq. ft. retail; 780,000 sq. ft. office; 120,000 sq. ft. casino, 300-room hotel; 25 acres open space; and 4-acre civic site.
County of Los Angeles			
203	Proposed Aviation Station Project	11604 Aviation Blvd.	Lot 1: 281-unit condominium/townhomes and 5,000 sq. ft. retail/commercial. Lot 2: 112-unit apartment and 21,500 sq. ft. retail/commercial.
204	West Los Angeles Community College Master Plan	Overland Ave. at Freshman Dr.	Approximately 291,300 sq. ft. of new building and renovation. Anticipate future student population of approximately 18,904 students and 1,248 employees by Fall 2022. Project includes second access road, parking structures, landscaping, and development of athletic facilities.
205	Lennox Charter High School	11044 and 11111 Freeman Ave.	560 students.
206	Marina Expressway Homes	Marina Expressway Eastbound & Mindanao Way	28 single-family condominiums.

Table 3-2
LAX Area Probable Development Projects

	Project	Address	Project Description
207	Mixed-use	1 Marina Expressway	Marina Del Rey Local Coastal Program (MDR LCP) Amendment.
City of Hawthorne			
208	360 South Bay	SE corner of Aviation Blvd. and El Segundo Blvd.	610 condominiums.
209	Condominiums / office	13806 Hawthorne Blvd.	171 condominium units and 32,500 sq. ft. of office space.
210	Prestige Villas	4500 West 116th St.	116 condominium units.
211	Single-family homes	14000 Yukon Ave.	6 single-family homes.
212	Hawthorne Mall Site	Hawthorne Mall Site	Proposed outlet mall (no set date for development); currently a shuttered mall.

Notes:

sq. ft. = square feet

TOD = Transit oriented development

Sources: Jose Mendivil, Associate Planner, Culver City Planning Division, Culver City, "Culver City Related Projects List," email to Patrick Tomcheck, May 22, 2015; Pedro Ayala, Transportation Engineering Associate II, Los Angeles Department of Transportation, "City of LA Updated Related Projects List for the LAX MP," email to Patrick Tomcheck, May 14, 2015; Maria Majcherek, Associate Planner, City of Hawthorne Planning & Community Development, "List of Projects - City of Hawthorne," email to Robert Burlingham, June 9, 2015; Paul Samaras, Principal Planner, City of El Segundo, "RE: LAX Background Projects Update - July 2015," email to Robert Burlingham, June 15, 2015; Suen Fei Lau, Associate Civil Engineer, Los Angeles County Department of Public Works, "RE: LAX Background Projects Update - July 2015," email to Robert Burlingham, July 2, 2015; Maria Majcherek, Associate Planner, City of Hawthorne, "RE: LAX Background Projects Update - July 2015," email to Robert Burlingham, July 2, 2015; Mindala Wilcox, Acting Planning Manager, City of Inglewood, "RE: LAX Background Projects Update - July 2015," email to Robert Burlingham, July 22, 2015.

Prepared by: LAWA, Ricondo & Associates, Inc., 2016.

This page left intentionally blank

4. ENVIRONMENTAL IMPACT ANALYSIS

This chapter presents an assessment of the environmental impacts of the proposed project, as described in Chapter 2, *Project Description*. This chapter describes the physical environment at and within the vicinity of LAX that may be affected by the proposed project; the impacts to that physical environment; and the measures proposed to mitigate those impacts, as required.

As identified in the Notice of Preparation (NOP) published on August 11, 2016 for this EIR, LAWA initially determined, based on a preliminary review of the proposed project, that four environmental resource areas would potentially be affected by construction of the project and would require additional review. The following environmental resource areas were identified in the NOP and are addressed in this chapter:

- Air Quality (including Human Health Risk)
- Greenhouse Gas (GHG) Emissions
- Cultural Resources (archaeological resources, paleontological resources, Tribal Cultural Resources, and human remains)
- Construction Surface Transportation

In addition, Appendix F of the State CEQA Guidelines requires an EIR to consider the potentially significant energy impacts of the proposed project. Therefore, Section 6.5 in Chapter 6, *Other Environmental Considerations*, addresses the infrastructure capacity and demand associated with the energy consumption associated with the construction and operation of the proposed project.

Organization

Each of the environmental disciplines addressed in this chapter is discussed in a separate section using a common organization. Sections are numbered 4.1 through 4.4. Several sections are divided into subsections to simplify and clarify the discussion. Within each environmental topic section, discussion of the following is provided:

- The **Introduction** briefly describes the issues addressed in the analysis and identifies related topics. The Introduction also identifies any specific issue area of the topic that is not being addressed as part of this EIR and provides a discussion explaining the reasons why. In many cases, a number of specific issue areas were evaluated and impacts determined to be less than significant, as documented in the Initial Study that was published with the NOP for the proposed project on August 11, 2016 (included as Appendix A of this EIR).

  In accordance with Sections 15063(c)(3)(A) and 15128 of the State CEQA Guidelines, further analysis of specific environmental resource areas where impacts were determined to be less than significant in the Initial Study is not required and is not provided in this EIR. The specific environmental resource areas that were determined to be no impact or less than significant through the analysis in the Initial Study, and therefore not proposed for further analysis in the EIR, include: Aesthetics, Agriculture and Forestry Resources, operational Air Quality and odors, Biological Resources, Cultural Resources (historic resources), Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, operational Transportation/Traffic, and Utilities and Service Systems.

- The **Methodology** describes how the issue was approached, including explanations of any assumptions, equations, or calculations; identification of information sources used for the analysis; and delineation of the study area considered for each environmental discipline. This subsection also identifies the environmental baseline used to determine the significance of potential impacts. A discussion of the environmental baseline is provided below under *Analytical Framework*.

- The **Existing Conditions** discusses the baseline conditions for the environmental discipline in the study area, including relevant activities, facilities, and regulations. The environmental baseline is described below under Analytical Framework.
- The **Thresholds of Significance** are quantitative or qualitative criteria used to determine whether a significant environmental impact would occur as a result of the project. This subsection identifies the origins of the thresholds of significance used in the analysis. In general, and unless otherwise noted, the thresholds of significance used in the analysis of the proposed project impacts reflect guidance provided in Appendix G of the State CEQA Guidelines[19] and/or criteria or guidance included in the L.A. CEQA Thresholds Guide.[20]
- The **Impacts Analysis** subsection presents the analysis of impacts for the construction (the build-out horizon year 2023) of the proposed project. Impacts were compared to the thresholds of significance to determine whether they would be, under CEQA, significant or less than significant. For purposes of determining significance, impacts were compared to the environmental baseline conditions, as further described in the Analytical Framework below. The impact analysis includes a determination of the level of significance of impacts under each threshold before mitigation.
- **Cumulative Impacts** are the impacts of the proposed project in conjunction with past, present, and reasonably foreseeable probable future projects. The environmental impacts of the proposed project may be individually minor, but collectively significant when considered in conjunction with other projects.
- **Mitigation Measures** are specified procedures, plans, policies, or activities proposed for adoption by the lead agency to reduce or avoid the significant impacts identified in the analysis of environmental impacts. This subsection identifies applicable Standard Control Measures that LAWA would apply as mitigation measures and any proposed project-specific mitigation measures to address significant impacts that would occur with implementation of the proposed project. In accordance with the requirements of CEQA, a mitigation monitoring and reporting program (MMRP) would be adopted as part of the proposed project approvals, to ensure that implementation of mitigation measures, including applicable Standard Control Measures, is properly monitored and documented. Further discussion of LAWA Standard Control Measures is provided in the Analytical Framework below.
- **Level of Significance After Mitigation** is a CEQA determination of the significance of a particular impact after implementation of the proposed mitigation measures. This subsection identifies any significant impacts that cannot be mitigated to a level that is less than significant. These "significant unavoidable impacts" are also listed in Chapter 6, *Other Environmental Considerations*, of this EIR.
- **Other Measures** include LAWA Standard Control Measures that would be applied to reduce impacts even though the project impact would be less than significant. This heading/subsection is only included in cases where there is a Standard Control Measure(s) applicable to the environmental topic and the impact would be less than significant. Further discussion of LAWA Standard Control Measures is provided in the *Analytical Framework* below.

---

[19] State of California, Guidelines for California Environmental Quality Act (State CEQA Guidelines), California Code of Regulations, Title 14, Chapter 3, Sections 15000-15387.

[20] City of Los Angeles, L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles, 2006, Available: http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf, Accessed January 19, 2017.

Analytical Framework

Environmental Baseline

Section 15125 of the State CEQA Guidelines requires that an EIR describe the physical environmental conditions in the vicinity of a proposed project "as they exist at the time the notice of preparation is published…." and further states that "[t]his environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant."

The NOP for this EIR was published on August 11, 2016. In accordance with the provisions of CEQA, 2016 is the baseline year for characterizing existing conditions in the environmental analysis. Where existing conditions data specific to 2016 were not available or where 2016, by itself, was not an appropriate representation of baseline conditions, this EIR identifies this fact, explains what data was used to determine existing conditions, and provides evidence of why this information is representative of baseline conditions.

Description of Cumulative Impacts

As defined in the State CEQA Guidelines Section 15355, cumulative impacts are the impacts of the proposed project in conjunction with past, present, and reasonably foreseeable probable future projects. The environmental impacts of the project may be individually minor, but collectively significant when considered in conjunction with other projects.

In accordance with the State CEQA Guidelines Section 15130, the proposed project must be evaluated for cumulative impacts for each environmental discipline to determine if they would be significant. This EIR provides an analysis of cumulative impacts associated with construction of the proposed project in conjunction with other construction projects both at/adjacent to LAX.

In accordance with State CEQA Guidelines Section 15130(b), there are generally two options for delineating cumulative development for evaluating cumulative impacts:

a. List past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or

b. Summarize projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.

For analyzing the proposed project's cumulative air quality and cultural resources impacts, a list approach was used. For analyzing cumulative GHG impacts, neither approach was used, since GHG impacts are inherently cumulative. For analyzing the proposed project's cumulative construction traffic impacts, a modified list approach was used. For analyzing the proposed cumulative energy impacts, both a list and a plan approach were used.

As further described in Chapter 2, *Project Description*, construction of the proposed project is expected to occur for approximately 76 months (six years and four months), beginning fourth quarter 2017 and ending in late 2023. Accordingly, the cumulative impacts analysis for each environmental issue analyzed in this EIR, with the exception of the cumulative impacts analysis for GHG emissions, evaluates the effects of other proposed development projects that may be constructed at some point during the same 76-month time period (i.e., 2017 through 2023). This includes past, present, and reasonably foreseeable probable future projects at and adjacent to LAX that could, in conjunction with the proposed project, result in cumulative impacts to the environment. Past, present, and reasonably foreseeable probable future projects at/adjacent to LAX are described in Chapter 3, *Overview of Project Setting*, and are listed in Table 3-1 and identified in Figure 3-1. In addition, the probable development projects in the City of Los Angeles and neighboring communities within the general vicinity of the proposed project listed in Table 3-2 were

considered qualitatively in the cumulative impact analysis for each resource, other than GHG emissions, which are cumulative in nature (see below), and were accounted for quantitively in the cumulative impact analysis for construction surface transportation through the use of a regional traffic growth factor that includes such other development (refer to Section 4.4.2.4 for details).

For the GHG analysis, as further described in Section 4.2, *Greenhouse Gas Emissions*, climate change impacts are cumulative in nature, and therefore no typical single project would result in emissions of such a magnitude that it would be significant on a project basis. Thus, the analysis of significance of potential impacts from GHG emissions related to a single project is already representative of the long-term impacts on a cumulative basis. Therefore, projects that exceed the project-specific significance thresholds would cause cumulatively considerable impacts with respect to GHG emissions.

As further described in Section 4.4, *Construction Surface Transportation*, of this EIR, the construction traffic analysis assumed that peak cumulative traffic conditions associated with other LAX development projects listed in Table 3-1 would occur in November 2019. In addition, baseline traffic volumes were multiplied by a growth factor of two percent per year to account for local background traffic growth through 2019. This annual growth rate assumption is conservative based on recent trends, and consistent with previous direction first provided by the City of Los Angeles Department of Transportation (LADOT) for use in the South Airfield Improvement Project (SAIP) EIR[21] construction traffic analysis and subsequently used for construction traffic studies prepared for the Crossfield Taxiway Project (CFTP) EIR,[22] Bradley West Project EIR,[23] Central Utility Plant Replacement Project (CUP-RP) EIR,[24] Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project EIR,[25] West Aircraft Maintenance Area (WAMA) Project EIR,[26] Midfield Satellite Concourse (MSC) EIR,[27] and the Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA North) EIR.[28]

---

21 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) South Airfield Improvement Project, (SCH 2004081039), October 2005. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=8820, Accessed January 19, 2017.

22 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Crossfield Taxiway Project, (SCH 2008041058), January 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=8829, Accessed January 19, 2017.

23 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, (SCH 2008121080), September 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=10040, Accessed January 19, 2017.

24 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Central Utility Plant Project, (SCH 2009041043), October 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=2348, Accessed January 19, 2017.

25 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project, (SCH 2012101019), January 2014. Available: http://www.lawa.org/ourLAX/RSA-South.aspx, Accessed January 19, 2017.

26 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) West Aircraft Maintenance Area (WAMA) Project, (SCH 2012091037), February 2014. Available: http://www.lawa.org/ourLAX/wama.aspx, Accessed January 19, 2017.

27 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse (MSC), (SCH 2013021020), June 2014. Available: http://www.lawa.org/MSCNorth/Index.aspx, Accessed January 19, 2017.

28 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA) and Associated Improvement Projects, (SCH 2014051040), June 2014. Available: http://www.lawa.org/ourLAX/Currentprojects.aspx?id=7984, Accessed January 19, 2017.

LAWA Standard Control Measures

Standard Control Measures are measures that implement existing regulations and/or LAWA plans and policies that would reduce or avoid potential environmental impacts. For example, LAWA has formulated a wide range of actions designed to reduce temporary, construction-related air pollutant emissions from its ongoing construction. Another example of a LAWA Standard Control Measure is conformance by contractors with LAWA's existing Archaeological Treatment Plan[29] to reduce or avoid potential impacts to previously undiscovered archaeological resources that may be encountered during construction activities. LAWA's Archaeological Treatment Plan establishes requirements for monitoring during grading and/or excavation in native and undisturbed soils by a qualified archaeologist and protocols for the identification, evaluation, and recovery of archaeological resources, if discovered.

Standard Control Measures are proposed, as warranted, in this EIR as "mitigation measures" to reduce significant impacts. In addition, project-specific mitigation measures have been proposed to supplement applicable Standard Control Measures to reduce significant impacts to the extent feasible. In accordance with the requirements of CEQA, this EIR describes and, where relevant, quantifies, impacts both with and without mitigation, including Standard Control Measures. As such, the analysis under the heading "Impact Analysis" in each section of this chapter identifies the impacts of the proposed project before the application of Standard Control Measures and project-specific mitigation measures. A description and, where appropriate, quantification, of the impacts of the proposed project after application of Standard Control Measures and project-specific mitigation measures is then provided under the "Level of Significance After Mitigation" heading in each section.

As described above, LAWA has also identified Standard Control Measures that would be applied to the proposed project even though the project impact would be less than significant. In such cases, the Standard Control Measure(s) are identified under the heading "Other Measures" at the end of the section, rather than under the heading of "Mitigation Measures." This "Other Measures" heading/subsection is only included in cases where there is a Standard Control Measure applicable to the environmental topic and the impact has already been determined to be less than significant (i.e., the impact determination of "less than significant" is prior to, and not dependent upon, application of the "Other Measures").

[29] City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan Mitigation Monitoring & Reporting Program: Archaeological Treatment Plan, prepared by Brian F. Smith and Associates. June 2005.

This page left intentionally blank

4.1 Air Quality and Human Health Risk

4.1.1 Air Quality

This air quality analysis examines air quality emissions that would result from construction associated with the proposed project. The proposed project would modernize the existing T2 and T3 at LAX.

Impacts related to human health risks from inhalation of toxic air contaminant emissions are addressed following this section, in Section 4.1.2, Human Health Risk Assessment. Greenhouse gas emissions are discussed separately in Section 4.2, *Greenhouse Gas Emissions*.

Appendix B.1 provides details on methods, assumptions and backup data for both the air quality and health risk assessment.

Prior to the preparation of this EIR, an Initial Study (included in Appendix A of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts on air quality. For one of these screening thresholds, the Initial Study found that the proposed project would have a "less than significant impact," and thus, no further analysis of this topic in an EIR was required. The following Initial Study screening criterion related to air quality does not require any additional analysis in this EIR:

- Potential impacts related to creation of objectionable odors were evaluated and determined to have a "Less than Significant Impact" in the Initial Study. As discussed therein, the proposed project would not include facilities typical of odor sources (e.g., sanitary landfills, wastewater treatment plants, composting facilities, chemical manufacturing facilities, auto body shops, etc.). The use of diesel equipment during construction would generate near-field odors that are considered to be a nuisance. Due to the distance of the project site from sensitive receptors (the closest sensitive receptors to the project site are the residential areas 3,200 feet to the north within the community of Westchester and the Hyatt Hotel on Century Boulevard approximately 2,000 feet to the east), odors from construction-related diesel exhaust would not affect a substantial number of people. Therefore, this issue is not addressed any further within this section.

As discussed in Section 2.6, in Chapter 2, *Project Description* of this EIR, the proposed project would not increase aircraft operations or passenger volumes beyond what would occur without the project, so aircraft and ground support equipment emissions are not analyzed in this EIR. However, because the proposed project includes an increase in operational square footage, operational energy-related emissions were evaluated.

The air quality impact analysis presented below includes development of emission inventories for the proposed project (i.e., the quantities of specific pollutants, typically expressed in pounds per day or tons per year) based on emissions modeling. The analysis also includes an assessment of localized concentrations of air pollutants associated with the proposed project (i.e., the concentrations of specific pollutants within ambient air, typically expressed in terms of micrograms per cubic meter ($\mu g/m^3$)) based on dispersion modeling. The criteria pollutant emissions inventories and localized concentrations were developed using standard, generally accepted industry software/models and federal, State, and locally approved methodologies. Results of the emission inventories were compared to daily emissions significance thresholds established by the South Coast Air Quality Management District (SCAQMD) for the South Coast Air Basin (Basin).[30] Results of the ambient concentrations were compared to SCAQMD concentration significance thresholds. This section is based in part on the detailed information contained in Appendix B of this EIR.

[30] South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993, as updated by SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed August 23, 2016.

4.1.1.1 Pollutants of Interest

Six criteria pollutants were evaluated for the proposed project: ozone (O_3) using as surrogates volatile organic compounds (VOCs)[31] and oxides of nitrogen (NO_X), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter or particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), and fine particulate matter or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$). In addition, these six criteria pollutants are considered to be pollutants of concern based on the type of emission sources associated with construction of the proposed project, and are thus included in this assessment.

Although lead (Pb) is a criteria pollutant, it was not evaluated in this section because the proposed project would not use any fuels or coatings with lead additives; therefore, the project would have no impacts on Pb levels in the Basin. The only source of Pb emissions from Los Angeles International Airport (LAX)[32] is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, only 0.04 percent of aircraft operations at LAX are piston engine aircraft, AvGas is no longer stored at the fuel farm operated by LAXFUELS, and the proposed project would not change LAX aircraft operations.[33]

Sulfate compounds (e.g., ammonium sulfate) are generally not emitted directly into the air but are formed through various chemical reactions in the atmosphere; thus, sulfate is considered a secondary pollutant. All sulfur emitted by airport-related sources included in this analysis was assumed to be released and to remain in the atmosphere as SO_2. No sulfate inventories or concentrations were estimated since the relative abundance of sulfates from fuel combustion is much lower than that of SO_2,[34] and since very little sulfur is emitted from project sources.

Following standard professional practice, the evaluation of O_3 was conducted by evaluating emissions of VOCs and NO_x, which are precursors in the formation of O_3. O_3 is a regional pollutant and ambient concentrations can only be predicted using regional photochemical models that account for all sources of precursors; regional photochemical O_3 modeling is beyond the scope of this analysis, and is not used for project-level reviews. Therefore, no photochemical O_3 modeling was conducted. Additional information regarding the six criteria pollutants that were evaluated in the air quality analysis is presented below.[35]

Ozone (O_3)[36]

O_3, a component of smog, is formed in the atmosphere rather than being directly emitted from pollutant sources. O_3 forms as a result of VOCs and NO_X reacting in the presence of sunlight in the atmosphere. O_3 levels are highest in warm-weather months. VOCs and NO_X are termed "O_3 precursors" and their emissions are regulated in order to control the creation of O_3. O_3 damages lung tissue and reduces lung function. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems (e.g., asthmatics), but also healthy

---

31 The emissions of volatile organic compounds (VOC) and reactive organic gases (ROG) are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOC.

32 Section VIII.a-b of the Initial Study (included in Appendix A of this EIR) discusses procedures to minimize generation of lead emissions from lead-based paint during demolition activities associated with the proposed project, As discussed therein, prior to issuance of any permit for the demolition or alteration of any existing structure(s), a lead-based paint survey would be performed following protocols of the Los Angeles Department of Building and Safety designed to detect all lead-based paint. Should lead-based paint materials be identified, standard handling and disposal practices would be implemented pursuant to Occupational Safety and Health Act (OSHA) and California Occupational Safety and Health Act (CalOSHA) regulations to limit worker and environmental risks. Compliance with existing federal, state and local regulations and routine precautions would reduce the potential for hazards to the public or the environment through the routine disposal or accidental release of hazardous building materials. Therefore, lead emissions from lead-based paint during demolition activities associated with the proposed project would be less than significant.

33 City of Los Angeles, Los Angeles World Airports, Los Angeles International Airport (LAX) 2012 Airport-Wide Emissions Inventory Final, Appendix A, CDM Smith Inc., April 2015.

34 Seinfeld and Pandis, Atmospheric Chemistry and Physics – From Air Pollution to Climate Change, John Wiley & Sons, Inc., New York, 1998, p. 59.

35 California Air Resources Board, Glossary of Air Pollution Terms, Available: http://www.arb.ca.gov/html/gloss.htm, Accessed July 19, 2016.

36 U.S. Environmental Protection Agency, Ozone Pollution, Available: https://www.epa.gov/ozone-pollution, accessed August 23, 2016.

children and adults. O_3 can cause health effects such as chest discomfort, coughing, nausea, respiratory tract and eye irritation, and decreased pulmonary functions.

Nitrogen Dioxide (NO_2)[37]

NO_2 is a reddish-brown to dark brown gas with an irritating odor. NO_2 forms when nitric oxide reacts with atmospheric oxygen. Most sources of NO_2 are man-made; the primary source of NO_2 is high-temperature combustion. Significant sources of NO_2 at airports are boilers, aircraft operations, and vehicle movements. NO_2 emissions from these sources are highest during high-temperature combustion, such as aircraft takeoff mode. NO_2 may produce adverse health effects such as nose and throat irritation, coughing, choking, headaches, nausea, stomach or chest pains, and lung inflammation (e.g., bronchitis, pneumonia).

Carbon Monoxide (CO)[38]

CO is an odorless, colorless gas that is toxic. It is formed by the incomplete combustion of fuels. The primary sources of this pollutant in Los Angeles County are automobiles and other mobile sources. The health effects associated with exposure to CO are related to its interaction with hemoglobin once it enters the bloodstream. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity, and impaired mental abilities.

Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)[39]

Particulate matter consists of solid and liquid particles of dust, soot, aerosols, and other matter small enough to remain suspended in the air for a long period of time. PM_{10} refers to particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (microns, um, or µm) and $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers. Particles smaller than 10 micrometers (i.e., PM_{10} and $PM_{2.5}$) represent that portion of particulate matter thought to represent the greatest hazard to public health.[40] PM_{10} and $PM_{2.5}$ can accumulate in the respiratory system and are associated with a variety of negative health effects. Exposure to particulate matter can aggravate existing respiratory conditions, increase respiratory symptoms and disease, decrease long-term lung function, and possibly cause premature death. The segments of the population that are most sensitive to the negative effects of particulate matter in the air are the elderly, individuals with cardiopulmonary disease, and children. Aside from adverse health effects, particulate matter in the air causes a reduction of visibility and damage to paints and building materials.

A portion of the particulate matter in the air comes from natural sources such as windblown dust and pollen. Man-made sources of particulate matter include fuel combustion, automobile exhaust, field burning, cooking, tobacco smoking, factories, and vehicle movement on, or other man-made disturbances of, unpaved areas. Secondary formation of particulate matter may occur in some cases where gases like sulfur oxides (SO_X)[41] and NO_X interact with other compounds in the air to form particulate matter. In the Basin, both VOCs and ammonia are also

---

37 U.S. Environmental Protection Agency, Nitrogen Dioxide, Available: https://www3.epa.gov/airquality/nitrogenoxides, accessed, August 23, 2016.

38 U.S. Environmental Protection Agency, Carbon Monoxide, Available: https://www3.epa.gov/airquality/carbonmonoxide, accessed August 23, 2016.

39 U.S. Environmental Protection Agency, Particulate Matter (PM) Pollution, Available: https://www.epa.gov/pm-pollution, accessed August 23, 2016.

40 U.S. Environmental Protection Agency, Particle Pollution and Your Health, September 2003.

41 The term SO_x accounts for distinct but related compounds, primarily SO_2 and, to a far lesser degree, sulfur trioxide. As a conservative assumption for this analysis, it was assumed that all SO_x is emitted as SO_2, therefore SO_x and SO_2 are considered equivalent in this document and only the latter term is used henceforth.

considered precursors to $PM_{2.5}$. Fugitive dust generated by construction activities is a major source of suspended particulate matter.

The secondary creators of particulate matter, SO_X and NO_X, are also major precursors to acidic deposition (acid rain). While SO_X is a major precursor to particulate matter formation, NO_X has other environmental effects. NO_X reacts with ammonia, moisture, and other compounds to form nitric acid and related particles. Human health concerns include effects on breathing and the respiratory system, damage to lung tissue, and premature death. Small particles penetrate into sensitive parts of the lungs and can cause or worsen respiratory disease. NO_X has the potential to change the composition of some species of vegetation in wetland and terrestrial systems, to create the acidification of freshwater bodies, impair aquatic visibility, create eutrophication of estuarine and coastal waters, and increase the levels of toxins harmful to aquatic life.

Sulfur Dioxide (SO_2)[42]

Sulfur oxides are formed when fuel containing sulfur (typically, coal and oil) is burned, and during other industrial processes. The term "sulfur oxides" accounts for distinct but related compounds, primarily SO_2 and sulfur trioxide. As a conservative assumption for this analysis, it was assumed that all SO_X are emitted as SO_2; therefore, SO_X and SO_2 are considered equivalent in this document. Higher SO_2 concentrations are usually found in the vicinity of large industrial facilities.

The physical effects of SO_2 include temporary breathing impairment, respiratory illness, and aggravation of existing cardiovascular disease. Children and the elderly are most susceptible to the negative effects of exposure to SO_2.

4.1.1.2 Scope of Analysis

The air quality analysis conducted for the proposed project addresses construction-related emissions. Construction emissions were quantified for each year of construction, occurring primarily between 2017 and 2023. The proposed project would take approximately 76 months (six years, four months) to construct. The basic steps involved in the scope of analysis are listed below.

The scope of the evaluation of construction emissions was conducted to:

- Identify construction-related emissions sources;
- Develop peak daily construction emissions inventories for the identified sources;
- Compare emissions inventories for each year of construction with appropriate CEQA significance thresholds for construction;
- Conduct dispersion modeling for both 2020, the estimated peak construction year, and May 2020, the estimated peak construction month, of project-related construction emissions;
- Obtain background concentration data from SCAQMD and estimate future concentrations resulting from construction of the proposed project;
- Compare peak concentration results with appropriate CEQA significance thresholds and ambient air quality standards to determine the significance of project impacts;
- Determine level of significance of project impacts; and
- Identify construction-related mitigation measures.

[42] U.S. Environmental Protection Agency, Sulfur Dioxide (SO2) Pollution, Available: https://www.epa.gov/so2-pollution, accessed August 23, 2016.

4.1.1.3 Methodology

4.1.1.3.1 Emission Source Types

Construction-related criteria pollutant emissions were quantified for CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ for the proposed project's constituent construction activities (project components). Sources of construction emissions evaluated in the analysis include off-road and on-road construction equipment, on-road delivery vehicles, on-site hauling and worker vehicles, as well as fugitive dust (PM_{10} and $PM_{2.5}$) from demolition, material handling, and vehicle travel on silted roadways, and fugitive VOCs from coating and painting.

The basis for the construction emissions analysis is the construction schedule, provided in Appendix B.1.1, that included approximate durations and activities for each project component that together constitute the proposed project. Construction activity estimates were developed for each project component, from which monthly emissions were quantified. Daily emissions were calculated by dividing monthly emissions by the number of work days in the given month, based on a 5-day-per-week workweek. Annual and quarterly emissions, as applicable, were based on the monthly emissions estimates.

Emissions estimates for the proposed project's construction activities included the application of emission reduction measures required by SCAQMD, including compliance with Rule 403 for fugitive dust control and use of ultra-low sulfur fuel. See Section 4.1.1.4.2.

As further described in Chapter 2, *Project Description*, construction of the proposed project would occur over approximately 76 months, projected to begin in approximately the fourth quarter 2017 and to end late 2023. Operations would continue at T2 and T3 during construction and the tenant(s) within T2 and T3 would manage their flight activity within the T2/T3 area based on the nature and location of construction activities occurring at the time, including managing flight schedules and gate availability to minimize aircraft delays and passenger inconvenience. Temporary gate closures during construction at T2 and T3 would likely be limited to no more than two or three at a time and would be coordinated with overall flight scheduling and gate assignments to minimize disruptions.

Off-Road Equipment

Off-road construction equipment includes dozers, loaders, compactors, and other heavy-duty construction equipment that are not licensed to travel on public roadways. Off-road construction equipment types, models, horsepower, load factor, and estimated maximum daily hours of operation were obtained and derived from the LAX Midfield Satellite Concourse (MSC) North Project (MSC North Project) EIR[43] for each individual project component. Equipment types with corresponding operating hours were matched with specific construction activities for each project component. Although much of the project is expected to be constructed in two shift workdays, a third overnight shift would be used for those work activities that cannot be accomplished on the day and night shifts due to coordination and interference issues. For the annual analysis, a third shift was assumed for 20 percent of workdays, leading to an average of 2.2 shifts per day. Eight hours were assumed to be the maximum hours per shift.

Off-road diesel exhaust emission factors for VOC, NO_X, and PM_{10} were based on the California Air Resources Board's (CARB's) 2011 Inventory Model database for In-Use Off-Road Construction, Industrial, Ground Support and Oil Drilling equipment (OFFROAD 2011).[44] Off-road exhaust emission factors for CO and SO_2 were derived from CARB's OFFROAD2007 model.[45] $PM_{2.5}$ emission factors were developed using the PM_{10} emission factors

---

43 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse (MSC), (SCH 2013021020), June 2014. Available: http://www.lawa.org/MSCNorth/Index.aspx, Accessed January 19, 2017.

44 California Air Resources Board, 2011 Inventory Model for In-Use Off-Road Equipment, Available: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles, Accessed July 19, 2016.

45 California Air Resources Board, 2007 Inventory Model for In-Use Off-Road Equipment, Available: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles, Accessed July 19, 2016.

and $PM_{2.5}$ size profiles derived from the CARB-approved California Emission Inventory and Reporting System (CEIDARS).[46,47]

Emissions for off-road equipment were calculated by multiplying an emission factor by the horsepower, load factor, usage factor, and operational hours for each type of equipment.

On-Road On-Site Equipment

On-road on-site equipment emissions are generated from on-site pickup trucks, water trucks, haul trucks, dump trucks, cement trucks, and other on-road vehicles that are licensed to travel on public roadways. Exhaust emissions for each construction year from on-road, on-site vehicles were calculated using CARB's EMFAC2014 emission factor model.[48]

On-road on-site equipment types were categorized into vehicle types corresponding to CARB vehicle classes. Emission factors from the EMFAC2014 model are expressed in grams per mile and account for startup, running, and idling operations. In addition, the VOC emission factors include diurnal, hot soak, running, and resting emissions, while the PM_{10} and $PM_{2.5}$ factors include tire and brake wear.

The emission factors were converted to pounds per hour and applied to the hourly activity schedule described previously.

On-Road Off-Site Equipment

On-road off-site vehicle trips include personal vehicles used by construction workers to access the construction site, as well as hauling trips for the transport of various materials and concrete to and from the site. On-road off-site hauling activity, including miles per trip were derived from the MSC North Project EIR and number of trips were based on the MSC North Project EIR and the proposed project schedule for each project component. On-road off-site vehicle emissions were calculated by determining total vehicle miles traveled (VMT) by each type of vehicle. VMT were determined assuming CalEEMod default trip distances of 40-miles roundtrip for all deliveries and worker trips. On-site deliveries were assumed to utilize the most conservative feasible route when determining VMT. The emission factors obtained from EMFAC2014 as described previously (in grams per mile) were applied to the VMT estimates to calculate total emissions.

Fugitive Dust

Fugitive dust is an additional source of PM_{10} and $PM_{2.5}$ emissions associated with construction activities. Fugitive dust includes re-suspended road dust from off-and on-road vehicles, as well as dust from grading, loading, and unloading activities. Additional sources of fugitive dust quantified in the analysis included construction demolition and concrete batching. Fugitive dust emissions were calculated using methodologies, formulas, and values from the U.S. Environmental Protection Agency (USEPA)'s Compilation of Air Pollutant Factors (AP-42),[49] the

---

46 South Coast Air Quality Management District, Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, October 2006, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2, accessed November 12, 2015.

47 California Air Resources Board, California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles - Summary of Overall Size Fractions and Reference Documentation, June 2, 2016, Available: http://www.arb.ca.gov/ei/speciate/pmsizeprofile2jun16.zip, Accessed August 5, 2016.

48 California Air Resources Board, Research Division, EMFAC2014 On-Road Emissions Inventory Estimation Model, Available: http://www.arb.ca.gov/msei/modeling.htm, Accessed November 12, 2015.

49 U.S. Environmental Protection Agency, AP 42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Section 13.2.1, Paved Roads, January 2011, Section 13.2.2 Unpaved Roads, November 2006, Section 13.2.3 Heavy Construction Operations, January 1995, Available: https://www3.epa.gov/ttn/chief/ap42/ch13/index.html, accessed November 12, 2015.

SCAQMD's CEQA *Air Quality Handbook*[50], and documentation associated with CARB's California Emission Estimator Model (CalEEMod) emissions estimator computer program.[51]

The proposed project is considered to be a large operation per SCAQMD Rule 403 (a large operation is any active operation on property which contains 50 or more acres of disturbed surface area or any earth-moving operation with a daily earth-moving or throughout volume of 3,850 cubic meters [5,000 cubic yards] or more three times during the most recent 365-day period.) Watering three times a day, as required by SCAQMD Rule 403 for large projects, was estimated to reduce on-site fugitive dust emissions by 61 percent.[52]

Fugitive VOCs

A primary source of construction-related fugitive VOC emissions is concrete or asphalt paving. VOC emissions from asphalt paving operations result from evaporation of the petroleum distillate solvent, or diluent, used to liquefy asphalt cement. Based on the CARB default data contained within CalEEMod, an emission factor of 2.62 pounds of VOC (from asphalt curing) per acre of asphalt material was used to determine VOC emissions from asphalt paving. Another source of construction-related fugitive VOC emissions is architectural coatings. VOC emissions from architectural coatings result from evaporation of volatile compounds present in a coating applied to a structure's surface. Based on the CARB data contained within CalEEMod, an emission factor of 0.012 pounds of VOC (from evaporation) per square foot of coated surface was used to determine VOC emissions from architectural coatings.

4.1.1.3.2 Dispersion Modeling for Local Concentrations

Air dispersion modeling was used to estimate the localized effects from the on-site portion of daily emissions from the sources described above. The localized effects were evaluated at nearby sensitive receptor locations (shown on **Figure 4.1.1-1**) that could be affected by the proposed project. The USEPA and SCAQMD-approved dispersion model, AMS/EPA Regulatory Model (AERMOD), was used to model the air quality impacts of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ emissions.[53] AERMOD can estimate the air quality impacts of single or multiple point, area, or volume sources using historical meteorological conditions. Volume sources are three-dimensional sources of emissions that can be used to model releases from a variety of emission sources, including moving vehicles (such as cars and trucks) on roadways. Area sources were used to represent the emissions from heavy-duty construction equipment and fugitive dust. Model inputs were developed following the SCAQMD's Final Localized Significance Threshold (LST) Methodology[54] and its Modeling Guidance for AERMOD.[55] To be conservative, this analysis did not calculate PM_{10} deposition, which would likely reduce the ambient modeled concentration of PM_{10} from the construction sources.

The workday was assumed to occur evenly for each hour of each day during the week (Monday through Friday) for all the proposed project. No work was assumed to occur during the weekend (Saturday through Sunday).

---

50 South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993, as updated by SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed July 19, 2016.

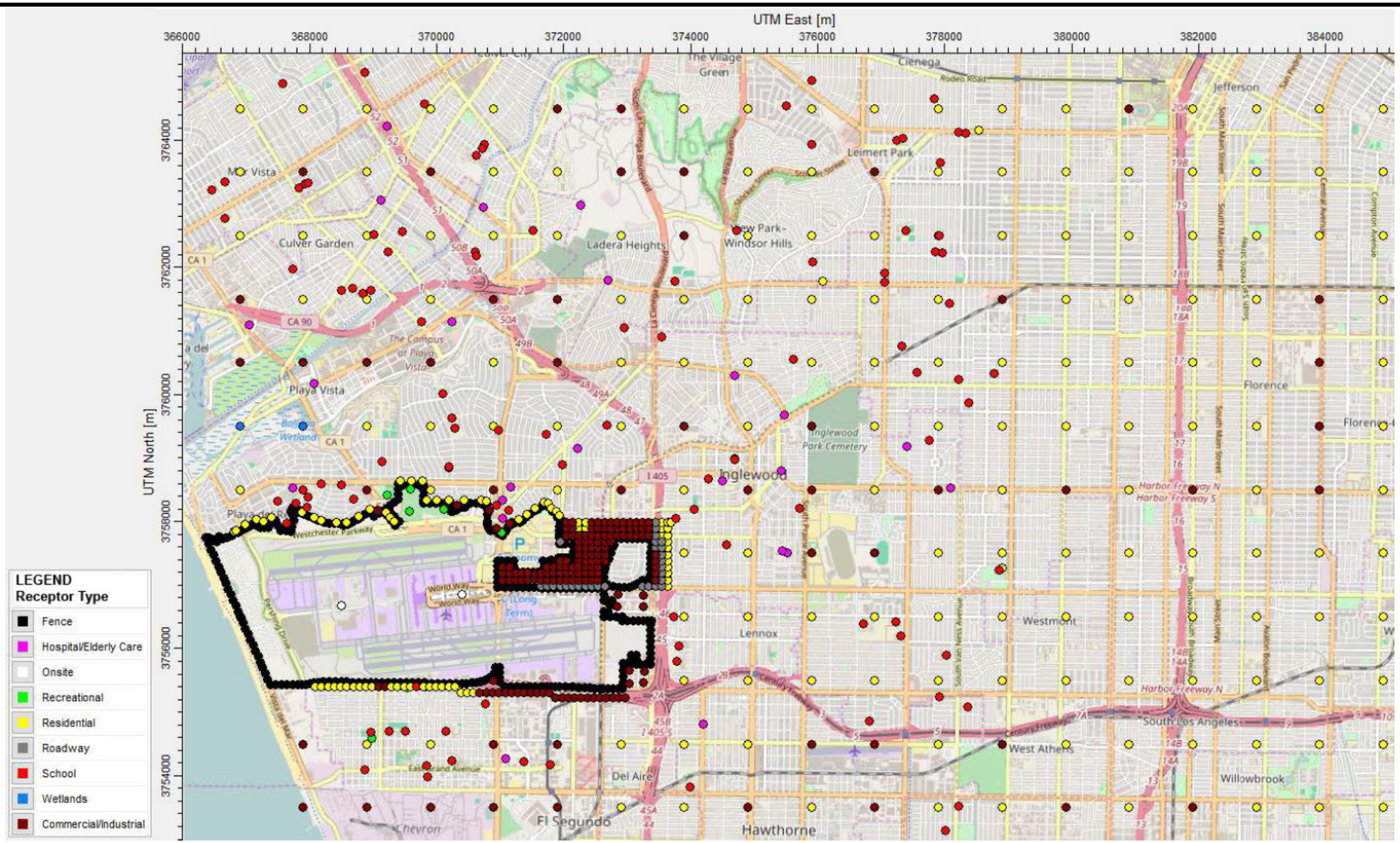
51 California Air Resources Board, California Emissions Estimator Model, Version 2013.2.2, Available: http://www.caleemod.com/, Accessed November 12, 2015.

52 South Coast Air Quality Management District, Rule 403 Fugitive Dust, as amended June 3, 2005, Available: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4, accessed November 12, 2015.

53 The AERMOD modeling system is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. Additional information, documentation, and guidance regarding the AERMOD modeling system is available on the USEPA's website at https://www3.epa.gov/scram001/dispersion_prefrec.htm#aermod, accessed January 3, 2017.

54 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2, accessed July 7, 2016.

55 South Coast Air Quality Management District, SCAQMD Modeling Guidance for AERMOD, Available: http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance, accessed July 7, 2016.



Source: Los Angeles World Airports, October 2016.
Prepared by: CDM Smith, November 2016.

LAX Terminals 2 and 3 Modernization Project	**Receptor Locations**	Figure **4.1.1-1**

Sources

Construction activities were assumed to be located at the project site and batch plant/staging areas. As shown in **Figure 2-12** and detailed in Section 2.5 of Chapter 2, *Project Description,* there is a proposed primary construction staging area and potential batch plant located north of Imperial Highway, between Aviation and La Cienega Boulevards. In addition, an optional primary construction staging area located within the northern area of the airport, on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard, as well as a batch plant staging area (adjacent to Aviation Boulevard), are being proposed. Due to the proximity of the optional primary construction staging area to sensitive receptors (i.e., residential area), which would likely have a higher influence on localized concentrations, the optional primary construction staging area results were used as the most conservative in the analysis. The on-site sources, including the batch plant/staging areas, were modeled as volume sources using the line-volume option in AERMOD. The haul route from the batch plant/staging area to the project site was also modeled as line-volume sources. These construction volume sources were modeled with a 5-meter release height and 1.4-meter initial vertical dimension.

Receptor Locations

Receptor points are the geographic locations where the air dispersion model calculates air pollutant concentrations. These discrete receptors were used to determine air quality impacts in the vicinity of the project site.[56] Receptors were placed at the boundary of LAX (along the fence line) and at various locations outside of the Airport property near project element construction sites, as well as inside the Airport at the Theme Building and near World Way West, as shown on **Figure 4.1.1-1**.

Meteorology

The meteorological data used in the analysis were obtained from the National Climatic Data Center website, and was preprocessed using AERMET.[57,58] AERMET is a meteorological preprocessor for organizing available meteorological data into a format suitable for use in the AERMOD air quality dispersion model. These files were also developed by the SCAQMD using site-specific surface characteristics (i.e., surface albedo, surface roughness, and Bowen ratio)[59] obtained using AERSURFACE.[60] AERSURFACE is a tool that provides realistic reproducible surface characteristic values, including albedo, Bowen ratio, and surface roughness length, for input into AERMET. The data set used consisted of hourly surface data collected at the LAX National Weather Service station (Station 23174) for calendar year 2015; [61] the data included ambient temperature, wind speed, wind direction, and atmospheric stability parameters, as well as mixing height parameters from the appropriate upper air station (Miramar, California). For the past 20 years, LAWA has used one year of meteorological data (met data) per previous SCAQMD suggestions. A review of wind roses for LAX from 2011 through 2015 (included in Appendix B.1.4) shows very little variation from year to year. A review of this data indicates that the results for 2015 would not change by more than approximately 10 percent if other years of met data were modeled. Therefore, if modeled concentrations are within 10 percent of a concentration threshold, as was the case for the 1-hour NO_2 NAAQS determination, impacts were conservatively estimated to be significant, as described in Section 4.1.1.6.3, **Table 4.1.1-8**.

---

56 Discrete Cartesian receptors are identified by their x (east-west) and y (north-south) coordinates and represent a specific location of interest.

57 National Centers for Environmental Information, Climate Data Online: Dataset Discovery, Available: https://www.ncdc.noaa.gov/cdo-web/datasets, accessed July 19, 2016.

58 U.S. Environmental Protection Agency, Support Center for Regulatory Atmospheric Modeling (SCRAM), Meteorological Processors and Accessory Programs, Available: https://www3.epa.gov/scram001/metobsdata_procaccprogs.htm, accessed July 19, 2016.

59 The surface albedo is the portion of sunlight that is reflected; the Bowen ratio is the measure of moisture available for evaporation.

60 U.S. Environmental Protection Agency, Support Center for Regulatory Atmospheric Modeling (SCRAM), Related Programs, Available: https://www3.epa.gov/ttn/scram/dispersion_related.htm#aersurface, accessed July 19, 2016.

61 This represents the most recent year with complete data; the data has passed the USEPA's requirement for 90 percent completeness by quarter for wind direction, wind speed, and temperature.

Terrain

The terrain data used in the analysis were USGS National Elevation Data (NED) geographic tiff files (GEO TIFF) with 10-meter elevation resolution. Two files covered the modeling domain: NED_n34w119_13.tif and NED_n35w119_13.tif.[62] This data was processed with the AERMAP pre-processor for AERMOD to generate base elevations for each source and receptor location.

Ozone Limiting Method for NO_2 Modeling

AERMOD contains various options for modeling the conversion of NO_x to NO_2, including the Ambient Ratio Methods (ARM and ARM2), Ozone Limiting Method (OLM), and Plume Volume Molar Ratio Method (PVMRM). Per the air quality modeling protocol reviewed by SCAQMD, the OLM option was used in this modeling analysis.[63] The SCAQMD provides hourly O_3 data for modeling conversion of NO_X to NO_2 using the OLM option. In addition, the following values were used in the analysis:

- Ambient Equilibrium NO_2/NO_x Ratio: 0.90
- In-stack NO_2/NO_x Ratio: 0.11 for heavy-duty trucks and construction equipment
- Default Ozone Value: Hourly O_3 data file provided by the SCAQMD

4.1.1.4 Existing Conditions

4.1.1.4.1 Climatological Conditions[64]

The Airport is located within the South Coast Air Basin of California, a 6,745 square-mile area encompassing all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The meteorological conditions at the Airport are heavily influenced by the proximity of the Airport to the Pacific Ocean to the west and the mountains to the north and east. This location tends to produce a regular daily reversal of wind direction; onshore (from the west) during the day and offshore (from the east) at night. Comparatively warm, moist Pacific air masses drifting over cooler air resulting from coastal upwelling of cooler water often form a bank of fog that is generally swept inland by the prevailing westerly (i.e., from the west) winds. The "marine layer" is generally 1,500 to 2,000 feet deep, extending only a short distance inland and rising during the morning hours producing a deck of low clouds. The air above is usually relatively warm, dry, and cloudless. The prevalent temperature inversion in the Basin tends to prevent vertical mixing of air through more than a shallow layer.

A dominating factor in California weather is the semi-permanent high-pressure area of the North Pacific Ocean. This pressure center moves northward in summer, holding storm tracks well to the north, and minimizing precipitation. Changes in the circulation pattern allow storm centers to approach California from the southwest during the winter months and large amounts of moisture are carried ashore. The Los Angeles region receives on average 10 to 15 inches of precipitation per year, of which 83 percent occurs during the months of November through March. Thunderstorms are light and infrequent, and on very rare occasions, trace amounts of snowfall have been reported at the Airport.

---

62 United States Geological Survey, National Map Viewer. Available: https://viewer.nationalmap.gov/basic/, Accessed November 28, 2016.

63 OLM is a widely accepted approach for estimating the conversion of NO_x to NO_2 in source plumes. SCAQMD provided the hourly ozone data that was used in the T2/3 OLM analysis.

64 Ruffner, J.A., Gale Research Company, Climates of the States: National Oceanic and Atmospheric Administration Narrative Summaries, Table, and Maps for Each State with Overview of State Climatologist Programs, Third Edition, Volume 1: Alabama – New Mexico, 1985, pp. 83-93.

The annual minimum mean, maximum mean, and overall mean temperatures at the airport are 56 degrees Fahrenheit (°F), 70°F, and 63°F, respectively. The prevailing wind direction at the airport is from the west-southwest with an average wind speed of roughly 6.4 knots (7.4 miles per hour [mph] or 3.3 meters per second [m/s]). Maximum recorded gusts range from 27 knots (31 mph or 13.9 m/s) in July to 56 knots (64 mph or 28.6 m/s) in March. The monthly average wind speeds range from 5.3 knots (6.1 mph or 2.7 m/s) in November to 7.6 knots (8.7 mph or 3.9 m/s) in April.[65]

4.1.1.4.2 Regulatory Setting

Air quality is regulated by federal, state, and local laws. In addition to rules and standards contained in the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), air quality in the Los Angeles region is subject to the rules and regulations established by CARB and SCAQMD with oversight provided by the USEPA, Region IX.

Federal

The USEPA is responsible for implementation of the CAA. The CAA was first enacted in 1970 and has been amended numerous times in subsequent years (1977, 1990, and 1997). Under the authority granted by the CAA, USEPA has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. **Table 4.1.1-1** presents the NAAQS that are currently in effect for criteria air pollutants. As discussed previously, O_3 is a secondary pollutant, meaning that it is formed from reactions of "precursor" compounds under certain conditions. The primary precursor compounds that can lead to the formation of O_3 are VOCs and NO_X.

Table 4.1.1-1
National and California Ambient Air Quality Standards (NAAQS and CAAQS)

			NAAQS	
Pollutant	**averaging time**	**CAAQS**	**primary**	**secondary**
Ozone (O_3)	8-hour	0.070 ppm (137 µg/m³)	0.070 ppm (137 µg/m³)	Same as Primary
	1-Hour	0.09 ppm (180 µg/m³)	N/A	N/A
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	N/A
	1-Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	N/A
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm (57 µg/m³)	0.053 ppm (100 µg/m³)	Same as Primary [1/]
	1-Hour	0.18 ppm (339 µg/m³)	0.10 ppm (188 µg/m³)	N/A
Sulfur Dioxide (SO_2) [2/]	Annual	N/A	0.030 ppm (80 µg/m³)	N/A
	24-Hour	0.04 ppm (105 µg/m³)	0.14 ppm (365 µg/m³)	N/A
	3-Hour	N/A	N/A	0.5 ppm (1300 µg/m³)
	1-Hour	0.25 ppm (655 µg/m³)	0.075 ppm (196 µg/m³)	N/A
Respirable Particulate Matter (PM_{10})	AAM	20 µg/m³	N/A	N/A
	24-Hour	50 µg/m³	150 µg/m³	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m³	12.0 µg/m³	15 µg/m³
	24-Hour	N/A	35 µg/m³ [10/]	Same as Primary
Lead (Pb)	Rolling 3-Month Average	N/A	0.15 µg/m³	Same as Primary

65 Western Regional Climate Center, Los Angeles International Airport (KLAX), CA Climatological Summary, Period of Record: Jul 1996 to Dec 2008, Available: http//www.wrcc.dri.edu/summary/lax.ca.html. Last accessed August 1, 2016.

Table 4.1.1-1
National and California Ambient Air Quality Standards (NAAQS and CAAQS)

			NAAQS	
Pollutant	**averaging time**	**CAAQS**	**primary**	**secondary**
	Monthly	1.5 µg/m³	N/A	N/A
Visibility Reducing Particles	8-Hour	Extinction of 0.23 per kilometer	N/A	N/A
Sulfates	24-Hour	25 µg/m³	N/A	N/A

Notes:
NAAQS = National Ambient Air Quality Standards
CAAQS = California Ambient Air Quality Standards
ppm = parts per million (by volume)
µg/m³ = micrograms per cubic meter
N/A = Not applicable
mg/m³ = milligrams per cubic meter
AAM = Annual arithmetic mean

1/ On March 20, 2012, the USEPA took final action to retain the current secondary NAAQS for NO_2 (0.053 ppm averaged over a year) and SO_2 (0.5 ppm averaged over three hours, not to be exceeded more than once per year) (77 Federal Register [FR] 20264).

2/ On June 22, 2010, the 1-hour SO_2 NAAQS was updated and the previous 24-hour and annual primary NAAQS were revoked. The previous 1971 SO_2 NAAQS (24-hour: 0.14 ppm; annual: 0.030 ppm) remains in effect until one year after an area is designated for the 2010 NAAQS (75 FR 35520).

Source: California Air Resources Board, Ambient Air Quality Standards Chart, Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, Accessed November 15, 2016.

Prepared by: CDM Smith, January 2017.

The CAA also specifies future dates for achieving compliance with the NAAQS and mandates that states submit and implement a State Implementation Plan (SIP) for local areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones.

LAX is located in the South Coast Air Basin, which is designated as a federal nonattainment area for O_3, $PM_{2.5}$, and Pb. Nonattainment designations under the CAA for O_3 are classified into levels of severity based on the level of concentration above the standard, which is also used to set the required attainment date. The South Coast Basin is classified as an extreme nonattainment area for O_3. The Basin was redesignated in 1998 to attainment/maintenance for NO_2 and in 2007 to attainment/maintenance for CO. Attainment/maintenance means that the pollutant is currently in attainment and that measures are included in the SIP to ensure that the NAAQS for that pollutant are not exceeded again (maintained). More recently, the Basin was redesignated to attainment/maintenance for PM_{10} on July 26, 2013.[66] Most recently, the Basin was also found to attain the 1997 $PM_{2.5}$ NAAQS;[67] however the Basin remains a nonattainment area for the 2006 daily and 2012 annual $PM_{2.5}$ NAAQS shown in **Table 4.1.1-2**. The attainment status with regards to the NAAQS is presented in **Table 4.1.1-2** for each criteria pollutant.

State

The CCAA, signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practicable date. The CAAQS are generally as stringent as, and in several cases more stringent than, the NAAQS; however, in the case of short-term standards for NO_2 and SO_2, the CAAQS are less stringent than the NAAQS. The currently applicable CAAQS are presented with the NAAQS in **Table 4.1.1-1**. The attainment status with regards to the CAAQS is presented in **Table 4.1.1-2** for each criteria pollutant. CARB has been granted jurisdiction over a number of air pollutant emission sources that operate in the

66 U.S. Environmental Protection Agency, Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Air Basin; Approval of PM_{10} Maintenance Plan and Redesignation to Attainment for the PM_{10} Standard, Federal Register, Vol. 78, No. 123, June 26, 2013, pp. 38223-38226.

67 U.S. Environmental Protection Agency, Clean Data Determination for 1997 $PM_{2.5}$ Standards; California-South Coast; Applicability of Clean Air Act Requirements, Federal Register, Vol. 81, No. 142, July 25, 2016, pp. 48350-48356.

State. Specifically, CARB has the authority to develop emission standards for on-road motor vehicles (with USEPA approval), as well as for stationary sources and some off-road mobile sources. In turn, CARB has granted authority to the regional air pollution control and air quality management districts to develop stationary source emission standards, issue air quality permits, and enforce permit conditions.

Table 4.1.1-2
South Coast Air Basin Attainment Status

Pollutant	Federal Standards (NAAQS) 1/	California Standards (CAAQS) 2/
Ozone (O_3)	Nonattainment – Extreme	Nonattainment
Carbon Monoxide (CO)	Attainment – Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment – Maintenance	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Respirable Particulate Matter (PM_{10})	Attainment - Maintenance	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment 3/	Nonattainment
Lead (Pb)	Nonattainment	Attainment

Notes:
1/ Status as of June 17, 2016.
2/ Effective December 2015.
3/ Classified as attainment for 1997 NAAQS, moderate nonattainment for 2012 NAAQS, and serious nonattainment for 2006 NAAQS.
Sources: U.S. Environmental Protection Agency. Green Book Nonattainment Areas. Available: http://www3.epa.gov/airquality/greenbk/index.html. accessed May 24, 2016; California Air Resources Board, Area Designations Maps/State and National, Available: https://www.arb.ca.gov/desig/adm/adm.htm, Accessed December 2015; U.S. Environmental Protection Agency. Federal Register vol. 81 No. 142 48350. Available: https://www.federalregister.gov/documents/2016/07/25/2016-17410/clean-data-determination-for-1997-pm25, effective November 28, 2015.
Prepared By: CDM Smith, January 2017.

South Coast Air Quality Management District

SCAQMD has jurisdiction over an area of 10,743 square miles consisting of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and the Riverside County portions of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin is a sub-region of SCAQMD's jurisdiction and covers an area of 6,745 square miles. While air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMPs) to meet the CAAQS and NAAQS. SCAQMD and CARB have adopted the 2012 AQMP which incorporates the latest scientific and technological information and planning assumptions, including the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), and updated emission inventory methodologies for various source categories.[68] The Final 2012 AQMP was adopted by the AQMD Governing Board on December 7, 2012. SCAQMD released the Draft 2016 AQMP for public review on June 30, 2016, and a revised draft incorporating public comments on October 7, 2016. The 2016 Draft AQMP includes baseline emissions assumptions consistent with the 2016 RTP/SCS, approved by the Southern California Association of Governments (SCAG) on April 7, 2016. As the 2016 AQMP has not yet been approved, the 2012 AQMP is the most appropriate plan to use for consistency analysis. The AQMP builds upon other agencies' plans to achieve federal standards for air quality in the Basin. It incorporates a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, and on-road and off-road mobile sources. The 2012 AQMP builds upon improvements in previous plans, and includes new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches. In addition, it highlights the significant amount of emission reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the federal CAA.

68 South Coast Air Quality Management District, Vision for Clean Air: A Framework for Air Quality and Climate Planning, June 27, 2012, Available: http://www.aqmd.gov/home/library/clean-air-plans/vision-for-clean-air, accessed November 12, 2015.

The 2012 AQMP's key undertaking is to bring the Basin into attainment with NAAQS for 24-hour $PM_{2.5}$ by 2014. It also intensifies the scope and pace of continued air quality improvement efforts toward meeting the 2023 8-hour O_3 standard deadline with new measures designed to reduce reliance on the CAA Section 182(e)(5) long-term measures for NO_x and VOC reductions. SCAQMD expects exposure reductions to be achieved through implementation of new and advanced control technologies as well as improvement of existing technologies.

The control measures in the 2012 AQMP consist of four components: 1) Basin-wide and Episodic Short-term $PM_{2.5}$ Measures; 2) Contingency Measures; 3) 8-hour O_3 Implementation Measures; and 4) Transportation and Control Measures provided by SCAG. The Plan includes eight short-term $PM_{2.5}$ control measures, 16 stationary source 8-hour O_3 measures, 10 early action measures for mobile sources, seven early action measures proposed to accelerate near-zero and zero emission technologies for goods movement-related sources, and five on-road and five off-road mobile source control measures. In general, the District's control strategy for stationary and mobile sources is based on the following approaches: 1) available cleaner technologies; 2) best management practices; 3) incentive programs; 4) development and implementation of zero-near-zero technologies and vehicles and control methods; and 5) emission reductions from mobile sources.

The SCAQMD also adopts rules to implement portions of the AQMP. Some of these rules are applicable to the construction of the proposed project. Rule 403 requires the implementation of best available fugitive dust control measures during active construction activities capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. Also, SCAQMD Rule 113 limits the amount of volatile organic compounds from architectural coatings in solvents, which lowers the emissions of odorous compounds.

Southern California Association of Governments

SCAG is the metropolitan planning organization (MPO) for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for the discussion of regional issues related to transportation, the economy, community development, and the environment. As the federally-designated MPO for the Southern California region, SCAG is mandated by the federal government to research and develop plans for transportation, hazardous waste management, and air quality. Pursuant to California Health and Safety Code Section 40460(b), SCAG has the responsibility for preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. SCAG is also responsible under the CAA for determining conformity of transportation projects, plans, and programs with applicable air quality plans. With regards to air quality planning, SCAG has prepared and adopted the 2016-2040 RTP/SCS, which includes a Sustainable Communities Strategy that addresses regional development and growth forecasts. [69]

Other Related Rules and Policies

In the Basin, the City of Los Angeles, CARB, and the SCAQMD have adopted or proposed additional rules and policies governing the use of cleaner fuels in public vehicle fleets. The City of Los Angeles Policy CF#00-0157 requires that City-owned or operated diesel-fueled vehicles be equipped with particulate traps and that they use ultra-low-sulfur diesel fuel. CARB has adopted a Risk Reduction Plan for diesel-fueled engines and vehicles.[70] The SCAQMD has adopted a series of rules that would require the use of clean fuel technologies in on-road transit buses, on-road public fleet vehicles, airport taxicabs and shuttles, trash trucks, and street sweepers.[71]

---

69 Southern California Association of Governments, Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life, Adopted April 7, 2016, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx, Accessed January 19, 2017.

70 California Air Resources Board, Stationary Source Division, Mobile Source Control Division, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, Available: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf, accessed August 22, 2016.

71 South Coast Air Quality Management District, Rule 1186.1 – Less-Polluting Sweepers, amended January 9, 2009; Rule 1191 – Clean On-Road Light- and Medium-Duty Public Fleet Vehicles, adopted June 16, 2000; Rule 1192 – Clean On-Road Transit Buses, adopted June 16, 2000; Rule 1193 – Clean On-Road Residential and Commercial Refuse Collection Vehicles, amended July 9, 2010; Rule 1194

Los Angeles Green Building Code Tier 1 standards, which are applicable to all projects with a Los Angeles Department of Building and Safety permit valuation over $200,000, require the proposed project to implement a number of measures that would reduce criteria pollutant and greenhouse gas emissions. These include measures such as: reduce vehicle and equipment idling times; comply with Tier 4 emission standards for non-road diesel equipment; retrofit existing diesel equipment with particulate filters and oxidation catalysts; replace aging equipment with new low-emission models; and consider the use of alternative fuels for construction equipment.

4.1.1.4.3 Existing Ambient Air Quality

In an effort to monitor the various concentrations of air pollutants throughout the basin, the SCAQMD has divided the region into 38 Source Receptor Areas in which monitoring stations operate. The monitoring station that is most representative of existing air quality conditions in the project area is the Southwest Coastal Los Angeles Monitoring Station located at 7201 W. Westchester Parkway (referred to as the LAX Hastings site), less than 0.5-mile from Runway 6L-24R (northernmost LAX runway). Criteria pollutants monitored at this station include O_3, CO, SO_2, NO_2, and PM_{10}. The nearest representative monitoring station that monitors $PM_{2.5}$ is the South Coastal Los Angeles County 1 Station, which is located 1305 E. Pacific Coast Highway (Long Beach). Existing ambient concentrations were used for dispersion modeling of NO_2, SO_2, and CO, but not for PM_{10} and $PM_{2.5}$ in Section 4.1.1.5.2 per SCAQMD guidelines. The most recent data available from the SCAQMD for these monitoring stations at the time of the Draft EIR preparation encompassed the years 2011 to 2015, as shown in **Table 4.1.1-3**.

Ozone – The maximum 1-hour O_3 concentration recorded during the 2011 to 2015 period was 0.114 parts per million (ppm), recorded in 2014. During the reporting period, the California 1-hour standard was exceeded four times. The maximum 8-hour O_3 concentration was 0.081 ppm recorded in 2013. The California standard was exceeded between 1 and 6 days annually from 2013 to 2015. The 8-hour NAAQS was not exceeded in 2014 or 2015 (not enough data was available in 2013 to determine the Federal 8-hour design value).

Carbon Monoxide – The highest 1-hour CO concentration recorded was 3.1 ppm, recorded in 2013. The maximum 8-hour CO concentration recorded was 2.51 ppm recorded in 2013. As demonstrated by the data, the standards were not exceeded during the five-year period.

Nitrogen Dioxide – The highest 1-hour NO_2 concentration recorded was 0.098 ppm in both 2011 and 2012. The maximum 98th percentile 1-hour concentration was 0.066 ppm, recorded in 2014. The highest recorded NO_2 annual arithmetic mean was 0.013 ppm recorded in 2011. As shown, the standards were not exceeded during the five-year period.

Sulfur Dioxide – The highest 1-hour concentration of SO_2 was 0.015 ppm recorded in 2014 and 2015, while the highest 99th percentile 1-hour concentration recorded was 0.008 ppm in 2011. The maximum 24-hour concentration was 0.003 ppm, recorded in 2014. The highest annual arithmetic mean concentration was 0.001, recorded in 2013. As shown, the standards were not exceeded during the five-year period.

– Commercial Airport Ground Access, amended October 20, 2000; and Rule 1196 – Clean On-Road Heavy-Duty Public Fleet Vehicles, amended June 6, 2008, Available: http://www.aqmd.gov/home/regulations/fleet-rules, accessed August 22, 2016.

Table 4.1.1-3
Southwest Coastal Los Angeles and South Coastal Los Angeles County
Monitoring Station Ambient Air Quality Data

Pollutant [1/ 2/]	2011	2012	2013	2014	2015
Ozone (O_3)					
Maximum Concentration 1-hr period, ppm	0.078	0.106	0.105	0.114	0.096
Days over State Standard (0.09 ppm)	0	1	1	1	1
Federal Design Value 8-hr period, ppm	---[4/]	---[4/]	---[4/]	0.064	0.068
Maximum California Concentration 8-hr period, ppm	0.067	0.075	0.081	0.080	0.078
Days over State Standard (0.07 ppm)	0	1	1	6	3
Carbon Monoxide (CO)					
Maximum Concentration 1-hr period, ppm	2.3	2.8	3.1	2.7	1.7
Days over State Standard (20.0 ppm)	0	0	0	0	0
Maximum Concentration 8-hr period, ppm	1.8	1.7	2.5	1.9	---
Days over State Standard (9.0 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
Maximum Concentration 1-hr period, ppm	0.098	0.098	0.078	0.087	0.087
98th Percentile Concentration 1-hr period, ppm	0.065	0.055	0.059	0.066	0.060
Days over State Standard (0.18 ppm)	0	0	0	0	0
Annual Arithmetic Mean (AAM), ppm	0.013	0.010	0.012	0.012	0.011
Exceed State Standard? (0.030 ppm)	No	No	No	No	No
Sulfur Dioxide (SO_2)					
Maximum Concentration 1-hr period, ppm	0.011	0.005	0.010	0.015	0.015
Days over State Standard (75 ppb)	0	0	0	0	0
99th Percentile Concentration 1-hr period, ppm	0.008	N/A	0.006	N/A	N/A
Maximum Concentration 24-hr period, ppm	0.002	0.001	0.001	0.003	0.002
Days over State Standard (140 ppb)	0	0	0	0	0
Annual Arithmetic Mean (AAM), ppm	0.000	0.000	0.001	---	0.000
Respirable Particulate Matter (PM_{10}) [3/]					
Maximum Federal Concentration 24-hr period, µg/m³	41	31	38	46	31
Days over Federal Standard (150 µg/m³)	0	0	0	0	0
Maximum California Concentration 24-hr period, µg/m³	41	30	37	45	31
Days over State Standard (50 µg/m³)	0	0	---	0	0
Annual California Concentration, µg/m³	21.4	19.5	---	21.9	---
Exceed State Standard? (20 µg/m³)	***Yes***	No	---	***Yes***	***Yes***
Fine Particulate Matter ($PM_{2.5}$) [3/]					
Federal Design Value 24-hr period, µg/m³	28	26	26	---[4/]	---[4/]
Federal Design Value Annual period, µg/m³	11.2	10.6	10.8	---[4/]	---[4/]
Maximum California Concentration 24-hr period, µg/m³	42.0	59.1	42.9	61.9	62.2
Annual Federal Concentration, µg/m³	10.7	10.5	10.9	---[4/]	10.2
Exceed State Standard? (12 µg/m³)	No	No	No	No	No

Notes:

AAM = Annual arithmetic mean — µg/m³ = micrograms per cubic meter

ppb = parts per billion (by volume) — --- = insufficient data to determine the value

ppm = parts per million (by volume) — N/A = not applicable

1/ Monitoring data from the Southwest Coastal Los Angeles Station (Station No. 820) was used for O_3, CO, NO_2, SO_2 and PM_{10} concentrations. Monitoring data from the South Coastal Los Angeles County 1 Monitoring Station (Station No. 072) was used for $PM_{2.5}$ concentrations.

2/ An exceedance is not necessarily a violation. Violations are defined in 40 CFR 50 for NAAQS and 17 CCR 70200 for CAAQS

3/ Statistics may include data that are related to an exceptional event.

4/ Insufficient data available to determine the value.

Source: California Air Resources Board, iADAM: Air Quality Data Statistics, Available: http://www.arb.ca.gov/adam/, accessed November 15, 2016; California Air Resources Board, AQMIS2, Available: http://www.arb.ca.gov/aqmis2/aqmis2.php, accessed November 15, 2016.

Prepared by: CDM Smith, January 2017

Respirable Particulate Matter (PM_{10}) – The highest recorded 24-hour PM_{10} concentration recorded was 46 µg/m^3 in 2014. During the period 2011 to 2015, the CAAQS for 24-hour PM_{10} was not exceeded and the NAAQS was not violated. The maximum annual arithmetic mean recorded was 21.9 µg/m^3 in 2014.

Fine Particulates ($PM_{2.5}$) – The maximum 24-hour $PM_{2.5}$ concentration recorded was 62.2 µg/m3 in 2015. The highest arithmetic mean of 10.9 was recorded in 2013. Between 2011 and 2013 the 24-hour and annual NAAQS were not violated. Not enough data was recorded or available in 2014 or 2015 to determine the NAAQS design values.

4.1.1.5 Thresholds of Significance

4.1.1.5.1 Regional Emissions Thresholds

The SCAQMD has developed CEQA construction-related thresholds of significance for air pollutant emissions from projects proposed in the Basin. Construction emission thresholds are summarized in **Table 4.1.1-4**. In accordance with the SCAQMD *CEQA Air Quality Handbook*, a significant air quality impact would occur if the estimated incremental increase in construction-related emissions attributable to the proposed project would be greater than the daily emission thresholds presented in **Table 4.1.1-4**.

Table 4.1.1-4
SCAQMD CEQA Thresholds of Significance for Air Pollutant Emissions in the South Coast Air Basin

Mass Emission Thresholds lbs/day		
Pollutant	**Construction**	**Operations**
Carbon monoxide, CO	550	550
Volatile organic compounds, VOC 1/	75	55
Nitrogen oxides, NO_X	100	55
Sulfur dioxide, SO_2	150	150
Respirable particulate matter, PM_{10}	150	150
Fine particulate matter, $PM_{2.5}$	55	55
Lead, Pb 2/	3	3

Notes:
1/ The emissions of VOCs and reactive organic gases are essentially the same for the combustion emission sources that are considered in this EIR. This EIR will typically refer to organic emissions as VOCs.
2/ The only source of lead emissions from LAX is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, due to the low number of piston-engines general aviation aircraft operations at LAX, AvGas quantities are low and emissions from these sources would not be materially affected by the project.
Source: South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, March 2015. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed November 15, 2016.
Prepared by: CDM Smith, January 2017

Baseline Used to Determine Significance for the Proposed Project Emissions

For construction-related increments associated with the proposed project, a baseline of zero emissions is used. Therefore, all construction-related emissions attributable to the proposed project are compared to the significance thresholds for construction.

For energy-related operational increments associated with the proposed project, a baseline of the 2016 existing energy-related emissions is used. Therefore, all energy-related operational emissions attributable to the proposed project are compared to the significance thresholds for operations.

4.1.1.5.2 Local Concentration Thresholds

The SCAQMD has also developed construction-related thresholds of significance[72] for air pollutant concentration impacts from projects proposed in the Basin. These thresholds are summarized in **Table 4.1.1-5**. In accordance with the SCAQMD *CEQA Air Quality Handbook*, a significant air quality impact would occur if the estimated incremental ambient concentrations due to construction-related emissions would be greater than the concentration thresholds presented in **Table 4.1.1-5**. The SCAQMD's recommended thresholds for the evaluation of local air quality impacts are based on the difference between the maximum monitored ambient pollutant concentrations in the area and the CAAQS or NAAQS. Therefore, the thresholds depend upon the concentrations of pollutants monitored locally with respect to a project site. For pollutants that already exceed the CAAQS or NAAQS (e.g., PM_{10} and $PM_{2.5}$), the thresholds are based on SCAQMD Rule 403 for construction as described in the *Final Localized Significance Threshold Methodology*.[73]

The methodology requires that the increase in ambient air concentrations, determined using a computer-based air quality dispersion model, be compared to local significance thresholds for $PM_{10,}$ $PM_{2.5}$, NO_2, SO_2 and CO. The thresholds for NO_2, SO_2, and CO represent the allowable increase in concentrations above background levels in the vicinity of the project site that would not cause or contribute to an exceedance of the relevant ambient air quality standards. The significance thresholds for PM_{10} and $PM_{2.5}$ are intended to constrain emissions so as to aid in the progress toward attainment and maintenance of the ambient air quality standards.[74] For the purposes of this analysis, the local construction emissions resulting from development of the proposed project are assessed with respect to the thresholds in **Table 4.1.1-5** using dispersion modeling (i.e., AERMOD). Details regarding the thresholds associated with each pollutant are provided below.

- **NO_2** - The local significance thresholds for 1-hour NO_2 concentrations are the 1-hour NO_2 CAAQS of 339 micrograms per cubic meter ($\mu g/m^3$), and the 1-hour NO_2 NAAQS of 188 $\mu g/m^3$. The 1-hour NO_2 NAAQS was determined from the 3-year average of the 98th percentile of the daily maximum 1-hour average, and thus requires a different approach to determine background and project-related concentrations than the 1-hour NO_2 CAAQS. The significance threshold for annual NO_2 concentrations is the annual NO_2 CAAQS, which is more stringent than the annual NO_2 NAAQS, therefore, compliance with the CAAQS also indicates compliance with the NAAQS. Because the thresholds are the ambient air quality standards, the project incremental concentrations were added to background concentrations before the comparison to the standard was made.

---

72 South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993; as updated by SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, Accessed January 19, 2017.

73 South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2, accessed July 7, 2016.

74 South Coast Air Quality Management District, Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, October 2006, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2, accessed November 12, 2015.

Table 4.1.1-5
SCAQMD CEQA Thresholds of Significance for Air Pollutant Concentrations in the South Coast Air Basin

Project-Related Concentration Thresholds			
Pollutant	**Averaging Period**	**Construction**	**Project Only or Total**
PM_{10}	Annual[1/]	1.0 µg/m³	Project Only
PM_{10}	24-hour[1/]	10.4 µg/m³	Project Only
$PM_{2.5}$	24-hour[1/]	10.4 µg/m³	Project Only
CO	1-hour[2/]	20 ppm (23 mg/m³)	Total incl. Background
CO	8-hour	9.0 ppm (10 mg/m³)	Total incl. Background
NO_2	1-hour (State)	0.18 ppm (339 µg/m³)	Total incl. Background
NO_2	1-hour (Federal)[3/]	0.100 ppm (188 µg/m³)	Total incl. Background
NO_2	Annual (State)[2/]	0.03 ppm (57 µg/m³)	Total incl. Background
SO_2	1-hour (State)	0.25 ppm (655 µg/m³)	Total incl. Background
SO_2	1-hour (Federal)[4/]	0.075 ppm (655 µg/m³)	Total incl. Background
SO_2	24-hour	0.04 ppm (655 µg/m³)	Total incl. Background

Notes:

1/ The concentration thresholds for PM_{10} and $PM_{2.5}$ have been developed by SCAQMD for construction impacts associated with the proposed project.

2/ The concentration threshold for 1-hour CO and annual NO_2 is the CAAQS, which is more stringent than the NAAQS for these pollutants and averaging periods.

3/ To evaluate impacts of the proposed project to ambient 1-hour NO_2 levels, the analysis includes both the current SCAQMD 1-hour State NO_2 threshold and the more stringent revised 1-hour federal ambient air quality standard of 188 µg/m³. To attain the federal standard, the 3-year average of 98th percentile of the daily maximum 1-hour average at a receptor must not exceed 0.100 ppm.

4/ To attain the SO_2 federal 1-hour standard, the 3-year average of the 99th percentile of the daily maximum 1-hour averages at a receptor must not exceed 0.075 ppm.

Source: SCAQMD, 1993, 2011; USEPA, 2010a (Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule, Federal Register Vol. 75, No. 6474, February 9, 2010) and 2010b (Primary National Ambient Air Quality Standard for Sulfur Dioxide, Final Rule, Federal Register Vol. 75, No. 35520, June 22, 2010).

Prepared By: CDM Smith, January 2017

- **SO_2** - The significance thresholds for 1-hour SO_2 concentrations are the 1-hour SO_2 CAAQS of 655 µg/m³, and the 1-hour SO_2 NAAQS of 196 µg/m³. The 1-hour SO_2 NAAQS is determined from the 3-year average of the 99th percentile of the daily maximum 1-hour average, and thus requires a different approach to determine background and project-related concentrations than the 1-hour SO_2 CAAQS. The significance threshold for daily SO_2 concentrations is the 24-hour SO_2 CAAQS, which is more stringent than the 24-hour SO_2 NAAQS; therefore, compliance with the CAAQS indicates compliance with the NAAQS. Results are also presented for the 3-hour and annual SO_2 NAAQS. Because the thresholds are the ambient air quality standards, the project incremental concentrations were added to background concentrations before the comparison to the standard was made.
- **CO** – The significance thresholds for CO are the 1-hour and 8-hour CAAQS of 23 milligrams per cubic meter (mg/m³) and 10 mg/m³, respectively. With respect to CO, the CAAQS are at least as stringent as the NAAQS; therefore, compliance with the CAAQS indicates compliance with the NAAQS. Because the thresholds are the ambient air quality standards, the project incremental concentrations were added to background concentrations before the comparison to the standard was made.
- **PM_{10} and $PM_{2.5}$** – The significance thresholds for PM_{10} and $PM_{2.5}$ concentrations are the CEQA thresholds developed by SCAQMD. SCAQMD developed a daily construction threshold for of 10.4 µg/m³. SCAQMD also developed an annual construction threshold of 1.0 µg/m³. These PM_{10} and $PM_{2.5}$ construction thresholds solely consider the project's incremental increases in PM_{10} and $PM_{2.5}$ concentrations; they do not require that project PM_{10} and $PM_{2.5}$ emissions be added to ambient background concentrations to determine impact significance.

4.1.1.5.3 Determination of Background Concentrations

The background concentrations for criteria pollutants were determined using historical pollutant concentrations available from CARB.[75] For the purposes of determining the background concentrations for comparison to the CAAQS (NO_2, CO, and SO_2), peak values were selected from the most recent three years of ambient air concentrations, shown in **Table 4.1.1-3** of Section 4.1.1.4.3, Existing Ambient Air Quality. For 1-hour SO_2 NAAQS, the background concentration was determined from the maximum consecutive three-year average of the 99th percentile (SO_2) peak daily 1-hour values from the most recent five years of data. As noted above, the concentration thresholds for PM_{10} and $PM_{2.5}$ developed by SCAQMD are for project increments only; therefore, no background concentrations were estimated for these two pollutants.

Finally, when modeling construction source emissions for comparison to the 1-hour NO_2 NAAQS, a seasonal hour-of-day NO_2 background file was developed following guidance developed by the California Air Pollution Control Officers Association (CAPCOA).[76] The most recent three years of monitored 1-hour NO_2 data available (2013-2015) from the LAX Hastings site was obtained from the USEPA.[77] This approach was used for construction to address the hourly construction impacts that occur in the late evening and early morning hours.

4.1.1.6 Impacts Analysis

4.1.1.6.1 Regional Construction Emissions

Peak daily construction-related emissions were calculated from a peak-month average day for each month of each year of construction associated with the proposed project. The peak daily emissions are presented in **Table 4.1.1-6** for all criteria and precursor pollutants studied (CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$). These calculations include appropriate reductions achieved with implementation of mandated dust control, as required by SCAQMD Rule 403 (Fugitive Dust).

Table 4.1.1-6
Project Maximum Construction Emissions (lbs/day)

Pollutant	Peak Daily Emissions	Threshold	Significant?
Carbon monoxide, CO	161	550	No
Volatile organic compounds, VOC	61	75	No
Nitrogen oxides, NO_X	261	100	Yes
Sulfur dioxide, SO_2	1	150	No
Respirable particulate matter, PM_{10}	86	150	No
Fine particulate matter, $PM_{2.5}$	46	55	No
Source: Appendix B.1.1 of this EIR. Prepared By: CDM Smith, January 2017			

As seen in **Table 4.1.1-6**, the unmitigated regional construction emissions would be less than the SCAQMD CEQA construction emission thresholds for CO, VOC, SO_2, PM_{10}, and $PM_{2.5}$ but would exceed the threshold for NO_X. Therefore, the proposed project's construction emissions of NO_X would be a significant impact.

---

75 California Air Resources Board, iADAM: Air Quality Data Statistics – Top 4 Summary, Available http://www.arb.ca.gov/adam/topfour/topfour1.php, accessed August 22, 2016.

76 California Air Pollution Control Officers Association, Modeling Compliance of the Federal 1-Hour NO_2 NAAQS, October 27, 2011, p. 14. Available: https://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf, accessed August 22, 2016.

77 U.S. Environmental Protection Agency, Air Quality System (AQS) – AirData – Download Data Files, Available: http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Raw, accessed August 23, 2016. Downloaded hourly_42602_2015.zip, hourly_42602_2014.zip, hourly_42602_2013.zip, and hourly_42602_2012.zip.

4.1.1.6.2 Regional Operational Emissions

Peak daily energy-related operational emissions were calculated using a CalEEMod default analysis for the proposed project. The peak daily emissions are presented in **Table 4.1.1-7** for all criteria and precursor pollutants studied (CO, VOC, NO_X, SO_2, PM_{10} and $PM_{2.5}$). These calculations include appropriate reductions achieved with implementation of mandated dust control, as required by SCAQMD Rule 403 (Fugitive Dust).

Table 4.1.1-7
Project Maximum Energy-Related Operational Emissions (lbs/day)

Pollutant	Peak Daily Emissions	Threshold	Significant?
Carbon monoxide, CO	2	550	No
Volatile organic compounds, VOC	18	55	No
Nitrogen oxides, NO_X	2	55	No
Sulfur dioxide, SO_2	<1	150	No
Respirable particulate matter, PM_{10}	<1	150	No
Fine particulate matter, $PM_{2.5}$	<1	55	No
Source: Appendix B.2.1 of this EIR. Prepared By: CDM Smith, January 2017			

As seen in **Table 4.1.1-7**, the unmitigated regional energy-related operational emissions would be less than the SCAQMD CEQA construction emission thresholds for all criteria pollutants. Therefore, the proposed project's energy-related operational emissions would be less than significant.

4.1.1.6.3 Local Construction Impacts

As discussed in Section 4.1.1.3, Methodology, the local effects from the on-site portion of construction emissions were evaluated at nearby sensitive receptor locations that could be affected by the proposed project consistent with the methodologies in the SCAQMD's Final Localized Significance Threshold Methodology,[78] and its Modeling Guidance for AERMOD.[79] The results of air dispersion modeling of the project construction sources are summarized in **Table 4.1.1-8**.

[78] South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2, accessed July 7, 2016.

[79] South Coast Air Quality Management District, SCAQMD Modeling Guidance for AERMOD, Available: http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance, accessed July 7, 2016.

Table 4.1.1-8
Project Peak Construction Concentrations (µg/m³)

Pollutant	Averaging Period[1/]	Construction (ug/m³)	Background (ug/m³)	Total (ug/m³)	Threshold (ug/m³)[1/]	Significant?
CO	1-hr CAAQS	30	3,565	3,595	23,000	No
	8-hr CAAQS	14	2,778	2,792	10,000	No
NO_2	1-hr CAAQS	103	164	267	339	No
	1-hr NAAQS	180	--[2/]	180	188	Within 10% of Threshold[3/]
	1-hr NAAQS[3/]	191	--[2/]	191	188	Yes
NO_2	Annual CAAQS	2	23	24	57	No
SO_2	1-hr CAAQS	<1	39	39	655	No
	1-hr NAAQS	<1	16	16	196	No
	3-hr NAAQS	<1	39	39	1,300	No
	24-hr CAAQS	<1	8	8	105	No
	Annual NAAQS	<1	3	3	80	No
PM_{10}	24-hr	5.3	--[4/]	5.3	10.4	No
	Annual	0.4	--[4/]	0.4	1.0	No
$PM_{2.5}$	24-hr	3.0	--[4/]	3.0	10.4	No

Notes:

CAAQS = California Ambient Air Quality Standard.

NAAQS = National Ambient Air Quality Standard.

1/ NAAQS and CAAQS often have the same averaging period, but usually have different standard values and may have different methods of determining compliance with each standard.

2/ The background 1-hour NO_2 values for the NAAQS analysis included 98th percentile concentrations for each hour-of-day by season (Winter, Spring, Summer, and Fall), 96 hourly values total, and these background NO_2 concentrations were included in the AERMOD runs so that the modeled concentration already included addition of background NO_2.

3/ As noted in Section 4.1.1.3.2, under Meteorology, LAWA has conducted an additional evaluation of the 1-hour NO_2 NAAQS analysis since the initial result (180 µg/m3) using one year of met data was within 10 percent of the threshold (188 µg/m3). The additional evaluation used the peak (highest 1st-high) project increment value instead of the 98th percentile (highest 8th-high) value, as suggested by SCAQMD (SCAQMD 2017). The peak value was added to the seasonal hour of day NO_2 background file used for the initial NAAQS comparison. The result of the additional evaluation indicated that the project impact on the 1-hour NO_2 NAAQS threshold would be significant.

4/ PM_{10} and $PM_{2.5}$ thresholds are project only values, therefore, are not added to background concentrations.

Source: Appendix B.1.2 of this EIR.

Prepared By: CDM Smith, January 2017.

As shown in **Table 4.1.1-8**, the unmitigated local construction concentrations would be less than the SCAQMD CEQA ambient air quality standards for all criteria pollutants except for NO_2 1-hr NAAQS. Therefore, the localized construction impacts of the proposed project relative to NO_2 concentrations would be significant.

4.1.1.7 Cumulative Impacts

A list of past, present, and reasonably foreseeable probable future projects whose construction could overlap with construction of the proposed project is provided in **Table 4.1.1-9** along with estimated mass emissions. Emissions for several of these cumulative development projects were estimated or obtained from publicly available and readily accessible environmental documents. Construction emissions for other projects were estimated based on the ratio of the project costs as compared to the proposed project, the ratio of construction trip intensity, and the ratio of the emissions using the proposed project as a reference baseline. Calculation details for the proposed project are provided in Appendix B.1. Due to the uncertainty of the multiple project schedules, the SCAQMD construction thresholds in tons per quarter were used per SCAQMD's 1993 CEQA Air Quality Handbook. [80]

[80] South Coast Air Quality Management District, CEQA Air Quality Handbook, 1993.

The SCAQMD has provided guidance on an acceptable approach to addressing cumulative impacts for air quality.[81] This guidance states as follows: "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in the Environmental Assessment or EIR … Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. … Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively considerable."

Table 4.1.1-9
Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)

Related LAWA Project During Construction	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
LAX T2/T3 Modernization Project 1/	4.3	1.8	3.9	<1	1.9	1.0
South Terminal Improvements	0.59	0.25	0.76	0.01	0.10	0.05
LAX Bradley West Project	_2/	_2/	_2/	_2/	_2/	_2/
Terminal 1 Improvements	_2/	_2/	_2/	_2/	_2/	_2/
West Aircraft Maintenance Area Project	_2/	_2/	_2/	_2/	_2/	_2/
Runway 6R-24L Runway Safety Area Improvements-NorthAirfield	_2/	_2/	_2/	_2/	_2/	_2/
Runway 7L-25R Runway Safety Area Improvements-South Airfield	_2/	_2/	_2/	_2/	_2/	_2/
Airport Metro Connector (AMC) 96th Street Transit Station	4.9	1.0	8.8	<1	1.0	0.6
LAX Midfield Satellite Concourse (MSC) North Project	35.0	3.6	12.5	<1	9.5	2.2
Hyperion Treatment Plant Connector	_2/	_2/	_2/	_2/	_2/	_2/
Miscellaneous Projects and Improvements	23.9	6.4	32.3	<1	4.2	1.7
Terminal 2 Improvements	_2/	_2/	_2/	_2/	_2/	_2/
Runway 7R-25L Rehabilitation	_2/	_2/	_2/	_2/	_2/	_2/
MSC North Extension 3/	3.5	0.4	1.3	<1	1	0.2
Northside Development	8.1	4.1	1.6	<1	1.0	0.4
Terminal 3 Improvements	_2/	_2/	_2/	_2/	_2/	_2/
City Los Angeles Bureau of Sanitation Stormwater Infiltration and Treatment Facility	11.3	1.0	6.0	0.0	1.5	0.7
Terminal 1.5	1.0	1.5	1.2	<1	0.3	0.2
Terminal 3 (T3) Connector	0.5	0.2	0.6	<1	0.1	0.0
Canine Facility/Airport Police Department Range	_6	_6	_6	_6	_6	_6
Secured Area Access Post (SAAP) Project	1.3	0.2	1.8	<1	0.2	0.2
Airport Police Station Relocation	_2/	_2/	_2/	_2/	_2/	_2/
Concourse 0 5/	2.3	0.5	5.6	<1	2.6	0.4
MSC South Project	3.5	0.4	1.3	<1	1	0.2
North Airfield Safety Improvements 4/	6.8	1.4	16.3	<1	10.9	1.5
Landside Access Modernization Program	7.5	2.1	18.4	<1	1.8	0.9
Total from Other Construction Projects Emissions	94.8	21.4	100.4	<1	32.6	8.3
Total Cumulative Construction Project Emissions	**114.5**	**24.8**	**112.3**	**<1**	**36.1**	**10.0**
SCAQMD Construction Emission Significance Thresholds	24.75	2.5	2.5	6.75	6.75	2.5
Emissions Exceed SCAQMD Project-Level Threshold?	Yes	Yes	Yes	No	Yes	Yes

Notes:
1/ Project construction is estimated to occur from 2017 to 2023.
2/ Based on the projected construction schedule, this project would not result in overlapping construction emissions with the proposed project during the estimated combined peak day.
3/ MSC North Extension peak day emissions estimated to be 10 percent of MSC North Project emissions.
4/ North Airfield Safety Improvements emissions were based on emissions estimated for LAX Specific Plan Amendment Study – Alternative 2 for construction elements: Center Taxiway for 24L, Runway 24L & South Parallel Taxiways, North CTA Aprons & Taxiways, and associated Support.
5/ Concourse 0 emissions were based on emissions estimated for LAX Specific Plan Amendment Study – Staff Recommended Alternative for construction elements: North CTA Concourses, North CTA Aprons & Taxiways, and associated Support.

81 South Coast Air Quality Management District, White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix A: Background, August 2003, D-3.

Table 4.1.1-9
Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)

Related LAWA Project During Construction	CO	VOC	NO_x	SO_x	PM_{10}	$PM_{2.5}$
6/ Canine Facility/Airport Police Department Range is accounted for in Northside Development.						

Sources: City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse, (SCH No. 2013021020), June 2014; City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update, (SCH 2012041003), December 2014; City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program, (SCH 2015021014), Section 4.2, Air Quality and Human Health Risk, and Appendix F, Air Quality, Greenhouse Gas Emissions, and Human Health Risk Assessment, September 2016, Available: http://www.connectinglax.com/informed.html, Accessed January 19, 2017.City of Los Angeles, Los Angeles World Airports, Los Angeles International Airport (LAX) Terminal 1.5 Project Final Initial Study-Mitigated Negative Declaration, November 2016; City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, (SCH 1997061047), January 2013.
Prepared by: CDM Smith, January 2017

As shown in **Table 4.1.1-9**, cumulative construction emissions of CO, VOC, NO_X, PM_{10}, and $PM_{2.5}$ would exceed the significance thresholds. Therefore, cumulative construction emissions of these five pollutants would be cumulatively significant.

Construction of the proposed project would exceed the project-specific significance construction emission thresholds for NO_X, as shown in **Table 4.1.1-6**. As a result, the contribution of the proposed project to cumulative construction-related impacts would be cumulatively considerable for NO_x. The project's contribution to cumulative CO, VOC, PM_{10}, and $PM_{2.5}$ impacts would not be cumulatively considerable.

The emissions estimates presented in **Table 4.1.1-9** are based upon project construction information known or reasonably assumed for the development projects listed in **Table 3-1**, as presented in Section 3.4, Development Setting of Chapter 3, *Overview of Project Setting*. The emissions estimates in **Table 4.1.1-9** do not include construction-related emissions from the 200+ other probable development projects listed in **Table 3-2** of Section 3.4 because quantification of construction-related emissions from those other projects, especially as related to overlapping the construction-related emissions of the proposed project, would be speculative in light of not having more information related to construction timing, duration, and approach. It is reasonable to conclude, however, that construction of those other development projects would add to the air quality impacts identified above as being cumulatively significant, but would not change the related conclusion that only the proposed project's contribution to cumulative NO_x impacts would be cumulatively considerable.

4.1.1.8 Mitigation Measures

LAWA has implemented a wide range of actions designed to reduce temporary, construction-related air pollutant emissions from its ongoing construction program and has established aggressive construction emissions reduction measures, particularly with regard to requiring construction equipment and heavy duty trucks to be newer models that have low-emission engines or be equipped with emissions control devices.[82] To achieve this commitment, LAWA has developed standard control measures which would be applied to the proposed project as mitigation measures.

The following project control measure would address construction-related emissions associated with the proposed project. The individual measures were selected from a list of standard control measures developed by LAWA for projects at LAX. Only those measures that are applicable to the proposed project are identified below. Measure numbers follow those on the standard list, therefore, the numbers listed in the table are not consecutive. This Standard Control Measure is proposed as a mitigation measure to reduce impacts to air quality. Although only NOx impacts were significant, the following measures reduce emissions from other criteria pollutants as well.

82 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

- **LAX-AQ-1. Construction-Related Air Quality Control Measures.**

  This measure describes numerous specific actions to reduce fugitive dust emissions and exhaust emissions from on-road and off-road mobile and stationary sources used in construction. Specific measures are identified in **Table 4.1.1-10**. Measures 1e, 1o, and 1p listed in the table were incorporated into the post-mitigation modeling (see Section 4.1.1.9 for modeling assumptions associated with these measures). However, the extent to which the remaining measures would reduce air quality impacts is not easily quantifiable; therefore, the analysis conservatively does not quantify the air quality benefit (i.e., emission reductions) of these measures (if feasible) is made in this analysis.

Table 4.1.1-10
Construction-Related Air Quality Control Measures

Measure Number	Measure	Type of Measure
1a	Post a publicly visible sign(s) with the telephone number and person to contact regarding dust complaints; this person shall respond and take corrective action within 24 hours.	Fugitive Dust
1b	During construction, the contractor shall demonstrate that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.	Fugitive Dust
1c	All areas to be paved should be completed as soon as practical; in addition, building pads should be laid as soon as practical after grading.	Fugitive Dust
1d	Prohibit idling or queuing of diesel-fueled vehicles and equipment in excess of five minutes. This requirement will be included in specifications for any LAX projects requiring on-site construction. Exemptions may be granted for safety-related and operational reasons, as defined by CARB or as approved by LAWA.	On-Road and Off-Road Mobile
1e	All diesel-fueled equipment used for construction will be outfitted with the best available emission control devices, where technologically feasible, primarily to reduce emissions of diesel particulate matter (PM), including fine PM ($PM_{2.5}$), and secondarily, to reduce emissions of NOx. This requirement shall apply to diesel-fueled off-road equipment (such as construction machinery), diesel-fueled on-road vehicles (such as trucks), and stationary diesel-fueled engines (such as electric generators). (It is unlikely that this measure will apply to equipment with Tier 4 engines, as these engines typically already incorporate the best available emission control devises.) The emission control devices utilized in construction equipment shall be verified or certified by California Air Resources Board or US Environmental Protection Agency for use in on-road or off-road vehicles or engines. For multi-year construction projects, a reassessment of equipment availability, equipment fleet mixtures, and best available emissions control devices shall be conducted annually for equipment newly brought to the project site each year.	Mobile and Stationary
1g	To the extent feasible, have construction employees commute during off-peak hours.	On-Road Mobile
1h	Make access available for on-site lunch trucks during construction, as feasible and consistent with requirements pertaining to airport security, to minimize off-site worker vehicle trips. (for the proposed project, lunch trucks would not access the CTA)	On-Road Mobile
1i	Utilize on-site rock crushing facility during construction, when feasible, to reuse rock/concrete and minimize off-site truck haul trips.	Stationary Point Source Controls
1j	Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Grid-based power can be from a direct hookup or a tie in to electricity from power poles. If diesel- or gasoline-fueled generators are necessary, generators using "clean burning diesel" fuel and exhaust emission controls shall be utilized.	Stationary Point Source Controls
1m	The contractor or builder shall designate a person or persons to ensure the implementation of all components of the construction-related measure through direct inspections, record reviews, and investigations of complaints.	Administrative
1n	Locate rock-crushing operations and construction material stockpiles for all LAX-related construction in areas away from LAX-adjacent residents, to the extent possible, to reduce impacts from emissions of fugitive dust.	Stationary Point Source Controls
1o	On-road medium-duty and larger diesel-powered trucks used on LAX construction projects with a gross vehicle weight rating of at least 14,001 pounds shall, at a minimum, comply with USEPA 2010 on-road emissions standards for PM_{10} and NOx. Contractor requirements to utilize such on-road haul trucks or the next cleanest vehicle available will be subject to the	On-Road Mobile

Table 4.1.1-10
Construction-Related Air Quality Control Measures

Measure Number	Measure	Type of Measure
	provisions of LAWA Air Quality Control Measure 1q below.	
1p	All off-road diesel-powered construction equipment greater than 50 horsepower shall meet, at a minimum, USEPA Tier 4 (final) off-road emissions standards. Contractor requirements to utilize Tier 4 (final) equipment or next cleanest equipment available will be subject to the provisions of LAWA Air Quality Control Measure 1q below.	Off-Road Mobile
1q	The on-road haul truck and off-road construction equipment requirements set forth in Air Quality Standard Control Measures 1o and 1p above shall apply unless any of the following circumstances exist and the Contractor provides a written finding consistent with project contract requirements that: • The Contractor does not have the required types of on-road haul trucks or off-road construction equipment within its current available inventory and intends to meet the requirements of the Measures 1o and 1p as to a particular vehicle or piece of equipment by leasing or short-term rental, and the Contractor has attempted in good faith and due diligence to lease the vehicle or equipment that would comply with these measures, but that vehicle or equipment is not available for lease or short-term rental within 120 miles of the project site, and the Contractor has submitted documentation to LAWA showing that the requirements of this exception provision (Measure 1q) apply. • The Contractor has been awarded funding by SCAQMD or another agency that would provide some or all of the cost to retrofit, repower, or purchase a piece of equipment or vehicle, but the funding has not yet been provided due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent the equipment or vehicle that would comply with Measures 1o and 1p, but that equipment or vehicle is not available for lease or short-term rental within 120 miles of the project site, and the Contractor has submitted documentation to LAWA showing that the requirements of this exception provision (Measure 1q) apply. • Contractor has ordered a piece of equipment or vehicle to be used on the construction project in compliance with Measures 1o and 1p at least 60 days before that equipment or vehicle is needed at the project site, but that equipment or vehicle has not yet arrived due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent a piece of equipment or vehicle to meet the requirements of Measures 1o and 1p, but that equipment or vehicle is not available for lease or short-term rental within 120 miles of the project, and the Contractor has submitted documentation to LAWA showing that the requirements of this exception provision (Measure 1q) apply. • Construction-related diesel equipment or vehicle will be used on the project site for fewer than 20 calendar days per calendar year. The Contractor shall not consecutively use different equipment or vehicles that perform the same or a substantially similar function in an attempt to use this exception (Measure 1q) to circumvent the intent of Measures 1o and 1p. • Documentation of good faith efforts and due diligence regarding the above exceptions shall include written record(s) of inquiries (i.e., phone log[s]) to at least three (3) leasing/rental companies that provide construction-related on-road trucks of the type specified in Measure 1o above (i.e., medium-duty and larger diesel-powered trucks with a gross vehicle weight rating of at least 14,001 pounds) or diesel-powered off-road construction equipment such as the types to be used by the Contractor, documenting the availability/unavailability of the required types of trucks/equipment. LAWA will, from time-to-time, conduct independent research and verification of the availability of such vehicles and equipment for lease/rent within a 120-mile radius of LAX, which may be used in reviewing the acceptability of the Contractor's good faith efforts and due diligence. In any of the situations described above, the Contractor/ Subcontractor shall provide the next cleanest piece of equipment or vehicle as provided by the step down schedules in Table A for Off-Road Equipment and Table B for On-Road Equipment. Nothing in the above shall require an emissions control device (i.e., VDECS) that does not meet OSHA standards.	On-Road and Off-Road Mobile

Table 4.1.1-10
Construction-Related Air Quality Control Measures

<table>
<tr><th>Measure Number</th><th>Measure</th><th>Type of Measure</th></tr>
<tr><td></td><td>
<table>
<tr><th colspan="3">Table A
Off-Road Compliance Step Down Schedule*</th></tr>
<tr><td>Compliance Alternative</td><td>Engine Standard</td><td>CARB-verified DECS (VDECS)</td></tr>
<tr><td>1</td><td>Tier 4 interim</td><td>N/A**</td></tr>
<tr><td>2</td><td>Tier 3</td><td>Level 3</td></tr>
<tr><td>3</td><td>Tier 2</td><td>Level 3</td></tr>
<tr><td>4</td><td>Tier 1</td><td>Level 3</td></tr>
<tr><td>5</td><td>Tier 2</td><td>Level 2</td></tr>
<tr><td>6</td><td>Tier 2</td><td>Level 1</td></tr>
<tr><td>7</td><td>Tier 3</td><td>Uncontrolled</td></tr>
<tr><td>8</td><td>Tier 2</td><td>Uncontrolled</td></tr>
<tr><td>9</td><td>Tier 1</td><td>Level 2</td></tr>
<tr><td colspan="3">** Tier 4 (interim or final) or 2007 model year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.</td></tr>
<tr><td colspan="3">Equipment less than Tier 1, Level 2 shall not be permitted.</td></tr>
</table>

<table>
<tr><th colspan="3">Table B
On-Road Compliance Step Down Schedule*</th></tr>
<tr><td>Compliance Alternative</td><td>Engine Model Year</td><td>CARB-verified DECS (VDECS)</td></tr>
<tr><td>1</td><td>2007</td><td>N/A**</td></tr>
<tr><td>2</td><td>2004</td><td>Level 3</td></tr>
<tr><td>3</td><td>1998</td><td>Level 3</td></tr>
<tr><td>4</td><td>2004</td><td>Uncontrolled</td></tr>
<tr><td>5</td><td>1998</td><td>Uncontrolled</td></tr>
<tr><td colspan="3">** 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.</td></tr>
<tr><td colspan="3">Equipment with a model year earlier than Model Year 1998 shall not be permitted.</td></tr>
</table>

* How to use Table A and Table B: For example, if Compliance Alternative #1 is required by this policy but Contractor cannot obtain an off-road vehicle that meets the Tier 4 interim standard (Compliance Alternative #1 in Table A) and meets one of the above exceptions, then Contractor shall use a vehicle that meets the next compliance alternative (Compliance Alternative #2) which is a Tier 3 engine standard equipped with a Level 3 VDECS. Should Contractor not be able to supply a vehicle with a Tier 3 engine equipped with a Level 3 VDECS in accordance with Compliance Alternative #2 and has satisfied the requirements of one of the above exceptions as to Contractor's ability to obtain a vehicle meeting Compliance Alternative #2, Contractor shall then supply a vehicle meeting the next compliance alternative (Compliance Alternative #3), and so on. If Contractor is proposing an exemption for on-road equipment, the step down schedule in Table B should be used. Contractor must demonstrate that it has satisfied one of the exceptions listed above before it can use a subsequent Compliance Alternative. The goal of this requirement is to ensure that Contractor has exercised due diligence in supplying the cleanest fleet available.

Nothing in the above shall require an emissions control device (i.e., VDECS) that does not meet OSHA standards.
</td><td></td></tr>
<tr><td colspan="3">Source: LAWA, 2016.
Prepared By: CDM Smith, January 2017</td></tr>
</table>

LAWA will include in bid documents for the proposed project language specifying that contractors shall use equipment on the proposed project that meets the most stringent emission requirements as specified in LAWA's standard control measures.

In addition to Standard Control Measure (Mitigation Measure) LAX-AQ-1, the following mitigation measure is also proposed to reduce significant construction-related air quality impacts associated with off-road equipment and on-site, on-road trucks emissions of all criteria pollutants.

- **MM-AQ (T2/T3)-1. Preferential Use of Renewable Diesel Fuel.**

  LAWA will require the use of renewable diesel fuel in proposed project construction off-road equipment and on-site, on-road trucks, for at least 90 percent of diesel fuel demand. Renewable diesel fuel is available locally for fleetwide use and has been shown to reduce criteria pollutant and greenhouse gas emissions from diesel engines.[83,84]

4.1.1.9 Impacts After Mitigation

As detailed in Section 4.1.1.8, Standard Control Measure (Mitigation Measure) LAX-AQ-1 would require the use of newer models of construction equipment and heavy duty trucks that have low-emission engines or be equipped with emissions control devices. In addition, Mitigation Measure MM-AQ (T2/T3)-1 would require the use of renewable diesel fuel in construction equipment and trucks for at least 90 percent of diesel fuel demand. Implementation of the recommended mitigation measures would result in substantial emission reductions compared to fleet-wide average emissions for heavy-duty construction equipment and trucks in the southern California region. In order to provide a conservative (worst-case) estimate of mitigated emission reductions, and in order to account for a lack of availability of equipment at times, implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 assumed that an additional 25 percent of the on-road trucks (relative to the EMFAC2014 default assumptions) would meet the USEPA 2010 on-road emissions standards for VOC, NO_2, PM_{10}, and $PM_{2.5}$. Similarly, the mitigated off-road construction equipment fleet was assumed to be 30 percent USEPA Tier 3 compliant, 35 percent Tier 4 Interim compliant, and 35 percent Tier 4 Final compliant. Fifty percent of the USEPA Tier 3 compliant equipment was assumed to be fitted with Level 3 VDECS diesel particulate filters. Compliance with the USEPA Tier 3 and Tier 4 off-road emissions standards would also result in substantial reduction in emissions of VOC, NO_x, PM_{10}, and $PM_{2.5}$ compared to fleet-wide average emissions for heavy-duty construction equipment. In addition, the use of renewable diesel fuel in the construction fleet also provides reductions in emissions of NO_x, CO, PM_{10}, and $PM_{2.5}$. The estimated effects of these control measures are shown in the tables below.

4.1.1.9.1 Mitigated Regional Construction Emissions

Mitigated daily construction emissions are presented in **Table 4.1.1-11** for all criteria and precursor pollutants studied (CO, VOC, NOx, SO_2, PM_{10}, and $PM_{2.5}$).

Table 4.1.1-11
Project - Maximum Construction Emissions (lbs/day), with Mitigation

Pollutant	Peak Daily Emissions	Threshold	Significant?
Carbon monoxide, CO	135	550	No
Volatile organic compounds, VOC	55	75	No
Nitrogen oxides, NO_x	129	100	***Yes***
Sulfur dioxide, SO_2	1	150	No
Respirable particulate matter, PM_{10}	77	150	No
Fine particulate matter, $PM_{2.5}$	39	55	No
Source: Appendix B.1.1 of this EIR. Prepared By: CDM Smith, November 2016.			

83 Neste Oil Corporation NEXBTL Renewable Diesel, 2014, Available: https://www.neste.com/sites/default/files/attachments/nexbtl_03032014.pdf, accessed August 23, 2016.

84 Propel Fuels, 2016, Available: https://propelfuels.com/fleet_and_commercial, accessed August 23, 2016.

As shown in **Table 4.1.1-11**, with the inclusion of mitigation measures, regional emissions of NO_X would remain significant.

4.1.1.9.2 Mitigated Local Construction Impacts

The results of NO_2 air dispersion modeling of the project construction sources, incorporating mitigation, are summarized in **Table 4.1.1-12**.

Table 4.1.1-12
Project - Construction Peak Concentrations (µg/m³), with Mitigation

Pollutant	Averaging Period	Construction (µg/m³)	Background (µg/m³)	Total (µg/m³)	Threshold (µg/m³)	Significant?
NO_2	1-hr CAAQS	37	164	201	339	No
	1-hr NAAQS	131[2/]	--[1/]	131[2/]	188	No
	Annual CAAQS	0.8	23	24	57	No

Notes:

1/ The background 1-hour NO_2 values for the NAAQS analysis included 98th percentile concentrations for each hour-of-day by season (Winter, Spring, Summer, and Fall), 96 hourly values total, and these background NO_2 concentrations were included in the AERMOD runs so that the modeled concentration already included addition of background NO_2.

2/ As noted in Section 4.1.1.3.2, under Meteorology, and reported in Section 4.1.1.6, LAWA conducted an additional evaluation of the unmitigated 1-hour NO_2 NAAQS analysis since the initial unmitigated result (180 µg/m³) using one year of met data was within 10 percent of the threshold (188 µg/m³). The additional evaluation used the peak (highest 1st-high) project increment value instead of the 98th percentile (highest 8th-high) value, as suggested by SCAQMD (SCAQMD 2017). The peak value was added to the seasonal hour of day NO_2 background file used for the initial NAAQS comparison. Therefore, the peak 1-hour NO_2 value (instead of the 98th percentile) from the mitigated analysis is shown in this table to provide basis for comparison to the unmitigated result as well as a conservative comparison to the NAAQS.

Source: Appendix B.1.2 of this EIR.
Prepared By: CDM Smith, January 2017

As shown in **Table 4.1.1-12**, the local construction concentrations after the incorporation of mitigation would be reduced to a level less than the SCAQMD CEQA ambient air quality standards for NO_2. Therefore, the mitigated localized construction effects of the proposed project relative to criteria pollutant emissions would be less than significant.

4.1.1.10 Level of Significance After Mitigation

4.1.1.10.1 Regional Construction Significance

With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (T2/T3)-1, construction-related significant NO_x impacts associated with regional emissions would be reduced, but not to a level that would be less than significant or less than cumulatively considerable. No other feasible mitigation measures have been identified that would reduce NO_x impacts further. Therefore, impacts to regional air quality from project-related construction NO_x emissions would be significant and unavoidable.

4.1.1.10.2 Regional Operational Significance

Unmitigated energy-related operational impacts associated with regional emissions would be less than significant, and therefore less than cumulatively considerable.

4.1.1.10.3 Local Construction Significance

Unmitigated construction-related impacts associated with local NO_2 concentrations would be significant, and therefore also cumulatively considerable. With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (T2/T3)-1, construction-related impacts associated with local NO_2 concentrations would be reduced to less than significant, and therefore also less than cumulatively considerable.

4.1.2 Human Health Risk Assessment

4.1.2.1 Introduction

As discussed in Chapter 2, *Project Description*, the proposed project would modernize Terminals 2 and 3. Such changes would result in the release of toxic air contaminants (TAC) from construction activities which could have an impact on people living in the vicinity of the Airport. The objective of this Human Health Risk Assessment (HHRA) and health impact analysis is to assess incremental changes to health impacts for people exposed to TAC resulting from construction associated with the proposed project. The HHRA and health impact analysis disclose whether construction of the proposed project would create significant health risks for people living, working, recreating, or attending school near LAX.

The approach and methods used in this HHRA have been consistently applied over several years as part of EIR development to support LAWA projects. An overview of approach and methods, provided below, is a general roadmap to the analyses.

Construction of the proposed project would take approximately six years and four months, starting in approximately the fourth quarter of 2017 and completing by 2023.

Assessing possible impacts of TAC releases during construction is complex and requires consideration of TAC emissions from a variety of Airport operations and from non-LAX-related mobile and stationary sources, as well as from construction activities. Additionally, emissions from all sources will change with time and by location. Regional sources are subject to efforts to improve air quality in the South Coast Air Basin by reducing emissions from both mobile and stationary sources, emissions from Airport operations will change as aircraft and other equipment are replaced, and construction emissions will vary in time and space as different parts of the projects are begun and completed. Because of these complexities, TAC impact analyses require an approach that examines incremental impacts to air quality.

Incremental risks are assessed as follows for this assessment:

- Construction emissions were estimated using construction schedules prepared for staging the project. Only the proposed project's incremental additional construction emissions were considered.

No investigation or modeling of non-airport sources near LAX was conducted. The South Coast Air Quality Management District (SCAQMD) has published a series of studies on air quality that provide data on regional air quality in the South Coast Air Basin, and these data were used to evaluate cumulative impacts of emissions on health risks. The most recent study of air quality (Multiple Air Toxics Exposure Study [MATES] IV) accounts, as much as possible, for impacts of regulatory efforts to improve air quality. [85]

The analysis described allows for comparisons of air quality impacts to assess possible health impacts:

- The air quality impacts to human health risks from the proposed project construction emissions provides a measure of project impacts during the period of construction.
- Comparison of regional air quality as measured in the MATES IV study with construction impacts of the proposed project provide an indication of the relative impact of the project on regional air quality.

The remaining subsections describe the development and results of the HHRA in detail. Appendix B.1.3 provides the detailed data supporting for this analysis.

As with all activities at facilities that accommodate vehicles and equipment that consume fuel, activities at LAX release TAC to the air. These TAC may come from motor vehicles; combustion of fossil fuels to produce hot water, steam, and power; and other sources. Impacts to human health associated with releases of TAC may include

[85] South Coast Air Quality Management District, Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV, May 2015, Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed January 19, 2017.

increased cancer risks, increased chronic (long-term) non-cancer health hazards, and increased acute (short-term) non-cancer health hazards from inhalation of TAC.

4.1.2.1.1 Scope of Analysis

The HHRA conducted for the proposed project addresses construction-related emissions. Cancer risks as well as chronic and acute non-cancer health hazard assessments all rely on estimating TAC concentrations in the air. Proposed project emissions are modeled using dispersion modeling to determine localized concentrations, which in turn are used to estimate the amount of TAC that people living, working, recreating, or going to school near LAX might inhale over both short (acute) and long (chronic) time frames.

Estimated emission rates, along with meteorological and geographic information, were used as inputs to an air dispersion model. The dispersion model predicted possible concentrations of TAC released during proposed project construction within the study area around the Airport. Modeled concentrations were used to estimate human health risks and hazards, which serve as the basis of the significance determinations for the proposed project. A detailed description of the estimation of emissions of TACs is provided in Section 4.1.1.2 for air quality. A summary is provided below.

TAC concentrations were estimated in two steps: first, dispersion modeling was used to estimate total volatile organic compound (VOC) and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}) concentrations, and then individual organic or particulate TAC concentrations were calculated using component profiles to speciate total VOC and PM_{10} concentration estimates into individual elements and compounds (species). For example, if total VOC at a given location was 0.1 microgram per cubic meter ($\mu g/m^3$) and a given volatile TAC makes up 1 percent of total VOC, the concentration of that TAC at that location would be 0.001 $\mu g/m^3$.

Project-related concentrations for TAC from construction sources were estimated using an air dispersion model (AERMOD Version 15181) with model options for 1-hour maximum, 8-hour maximum, and annual average concentrations selected[86]. Data used as input to the model were taken from construction-based sources:

- Construction-related carcinogenic TAC emissions were modeled for each year of construction using the schedule for proposed project construction activities and projected emissions during these activities. Year-by-year emissions estimates were used to account for changes in both location and types of activities needed as the project progresses. Incremental annual average TAC concentrations were used to estimate cancer risk over the entire construction period.
- Construction-related acute and non-cancer chronic TAC emissions were modeled for the peak month and peak year of construction emissions, respectively. Incremental short-term 1-hour and 8-hour concentrations were then used to estimate acute non-cancer health hazard impacts, and incremental annual average concentrations were used to estimate chronic non-cancer health hazards using methods described in Appendix B.1.3.

4.1.2.1.2 Exposure Concentrations

TAC concentrations were estimated at hundreds of locations surrounding the Airport. This modeling grid was used to find locations where Airport emissions would have the greatest impact. Modeled concentrations at these locations were used to estimate incremental human health risks and hazards. These estimates assist in making determinations of significance of health impacts for the proposed project.

---

86 The AERMOD modeling system is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. Additional information, documentation, and guidance regarding the AERMOD modeling system, including the model code and documentation for AERMOD Version 15181, is available on the USEPA's website at https://www3.epa.gov/scram001/dispersion_prefrec.htm#aermod, accessed January 3, 2017.

In February 2015, the California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA) released the Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.[87] The guidance recommends the use of a software program, Hot Spots Analysis and Reporting Program Version 2 (HARP2) developed by the Air Resources Board, for calculating and presenting HRA results for the Hot Spots Program. For this HHRA, HARP2 equations and calculations were utilized to address project-specific impacts.

4.1.2.1.3 Overview of Risk Assessment

This HHRA is based on estimates for construction TAC emissions associated with the proposed project. Baseline construction emissions are assumed to be zero. Cumulative impacts, including possible impacts of Airport and non-airport related construction, are discussed in Section 4.1.2.5.

Emissions sources during construction were analyzed for each construction year from 2017 through 2023.

The HHRA followed State and, as necessary, federal guidance[88] for performance of risk assessments and was conducted as described above and defined in SCAQMD, CalEPA, and United States Environmental Protection Agency (USEPA) guidance[89,90,91] consisting of selection of TAC of concern, exposure assessment, toxicity assessment, and risk characterization. These steps are summarized below.

Selection of TAC of Concern

In general, TAC of concern for the HHRA are based on TAC identified under Assembly Bill AB 2588 and for which the CalEPA OEHHA has developed cancer slope factors, chronic reference exposure levels, and/or acute reference exposure levels.[92] Cancer slope factors define the relationship between inhalation of TAC and risk of developing cancer. Reference exposure levels define the relationship between inhalation of TAC and subsequent non-cancer health impacts. Reference exposure levels are separately identified for both long- and short-term exposure durations.

---

87 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, Available: http://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0, Accessed January 19, 2017.

88 FAA does not conduct HHRA analyses in the NEPA context; federal USEPA guidance is used only to assist with risk assessment in cases where State guidance is silent or outdated.

89 South Coast Air Quality Management District, Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics Hot Spots Information and Assessment Act (AB 2588), June 5, 2015.

90 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants, March 1999, Available: http://oehha.ca.gov/air/crnr/adoption-air-toxics-hot-spots-risk-assessment-guidelines-part-i-technical-support-document, Accessed January 19, 2017; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis, August 2012, Available: http://oehha.ca.gov/air/crnr/notice-adoption-technical-support-document-exposure-assessment-and-stochastic-analysis-aug, Accessed January 19, 2017; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part III: Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels, June 2008, Available: http://oehha.ca.gov/air/crnr/air-toxics-hot-spots-program-risk-assessment-guidelines-part-iii-1999, Accessed January 19, 2017; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part II: Technical Support Document for Describing Available Cancer Potency Factors, updated May 2009, Available: http://oehha.ca.gov/air/crnr/technical-support-document-cancer-potency-factors-2009, Accessed January 19, 2017; California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, Available: http://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0, Accessed January 19, 2017.

91 U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December 1989.

92 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals, Accessed January 19, 2017.

The list of TAC of concern used in this HHRA was developed using regulatory lists, emissions estimates, human toxicity information, results of the LAX Master Plan HHRA, and a review of health risk assessments for construction activities included in similar EIRs. [93] This list of TAC was further refined to include only TAC with chronic Reference Exposure Levels (RELs), acute RELs, and inhalation cancer slope factors identified by the CalEPA OEHHA. The resulting list of TAC of concern evaluated in this HHRA is provided in **Table 4.1.2-1**.

Exposure Assessment

For analysis of the proposed project, the following sensitive receptors were selected for quantitative evaluation: on-airport workers, off-airport workers, off-airport adult residents, and off-airport child residents. Each receptor represents a unique population and set of exposure conditions. As a whole, they cover a range of exposure scenarios for people who may be affected by proposed project emissions, and include receptors that would be subject to the highest exposures for receptors located downwind and within the area of possible impact. Thus, risks and hazards for Maximally Exposed Individuals (MEI) and for receptors at various distances north, east and south of the Airport are provided to assist in evaluation of significance determinations.

Table 4.1.2-1
Toxic Air Contaminants (TAC) of Concern for the Proposed Project

Toxic Air Contaminant	Type
Acetaldehyde	VOC
Acrolein	VOC
Benzene	VOC
1,3-Butadiene	VOC
Ethylbenzene	VOC
Formaldehyde	VOC
n-Hexane	VOC
Methyl alcohol	VOC
Methyl ethyl ketone	VOC
Propylene	VOC
Styrene	VOC
Toluene	VOC
Xylene (total)	VOC
Naphthalene	PAH
Arsenic	PM-Metal
Cadmium	PM-Metal
Chromium VI	PM-Metal
Copper	PM-Metal
Lead	PM-Metal
Manganese	PM-Metal
Mercury	PM-Metal
Nickel	PM-Metal
Selenium	PM-Metal
Vanadium	PM-Metal
Diesel PM	Diesel Exhaust
Chlorine	PM-Inorganics
Silicon	PM-Inorganics
Sulfates	PM-Inorganics

Notes:
PAH = Polycyclic aromatic hydrocarbons
PM = Particulate matter
VOC = Volatile organic compounds
Prepared By: CDM Smith., January 2017

93 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9s, Supplemental Health Risk Assessment, April 2004. Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

The EIR's approach to assessing health risks considers all receptors. The range of risks and hazards for areas surrounding LAX thus provides information about community impacts at locations where individuals live, work, recreate, or go to school, as they compare to regulatory thresholds and to impacts associated with typical air quality in the South Coast Air Basin.

Different receptors (e.g., off-site workers, child residents) could be exposed to TAC in several ways, deemed exposure pathways. An exposure scenario that considers various pathways by which they might be exposed to TAC was developed for each receptor. As discussed below, exposure scenarios for the proposed project include a single exposure pathway – inhalation of Airport–related TAC.

An exposure pathway consists of four parts:

- A TAC source (e.g., construction equipment fuel combustion)
- A release mechanism (e.g., construction equipment engine exhaust)
- A means of transport from point of release to point of exposure (e.g., local winds)
- A route of exposure (e.g., inhalation)

If any of these elements of an exposure pathway is absent, no exposure can take place, and, the pathway is considered incomplete. Incomplete pathways were not evaluated in this HHRA. In addition, some exposure pathways may be complete, but may result in little or negligible exposure (see next paragraph).

An example previously addressed in LAWA environmental documents is deposition of particulate emissions onto ground and hard surfaces, with subsequent exposure for people that contact this material on their skin and/or via hand to mouth activity. Although some deposition of particulate matter does occur, the amount of material deposited is too small to result in accumulation that may be of concern for health impacts. Other exposure pathways -- including uptake from soil into homegrown vegetables; transport of TAC in soil to indoor dust and/or surface water; and other indirect pathways -- were addressed quantitatively in the programmatic HHRA developed for the LAX Master Plan EIR[94] (see LAX Master Plan Final EIR Technical Report 14a and Technical Report S-9a).[95] No pathway other than inhalation was found to be an important contributor to exposure and thus to human health risk. Based on this previous analysis, pathways other than inhalation were not assessed.

For this HHRA, the inhalation pathway is the single substantive exposure pathway and is responsible for essentially all risk and hazard associated with the proposed project. Inhalation of TAC is therefore the only pathway that was quantitatively evaluated.

Toxicity Assessment

Risks from exposure to TAC were calculated by combining estimates of exposure via inhalation with appropriate toxicity criteria, as described in more detail below. A toxicity assessment for TAC of concern was conducted for the LAX Master Plan Final EIR, as described in Technical Report 14a of that EIR. Since completion of these reports, some changes have been made by both the CalEPA OEHHA and USEPA to toxicity criteria for a few TAC identified in **Table 4.1.2-1**. To maintain consistency with regulatory guidance, toxicity information from previous HHRA efforts was updated to be consistent with the most current state and federal regulatory databases for the analyses included in this report. Such criteria remained unchanged for DPM, Cr VI, benzene, formaldehyde, nickel, all TAC associated with the greatest estimated health impacts in previous programmatic and project-specific LAWA risk assessments.

94 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

95 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017

Acute RELs developed by the State of California were used in the characterization of acute non-cancer health hazards associated with the proposed project. [96] Other sources of acute toxicity criteria (e.g., ATSDR) were also evaluated as a source of acute criteria as part of this re-assessment of toxicity information.

Cancer slope factors, and chronic RELs developed by the State of California[97] were used to characterize cancer risks and chronic non-cancer health hazards associated with longer-term inhalation of emissions from construction or operational activities. Both types of toxicity criteria are based on studies of chronic exposure in animals or, in some cases, to people. Tables of the toxicity values used in the HHRA calculations are provided in Appendix B.1.3.

Acute RELs were used to characterize hazards associated with short-term exposure (usually from exposures on the order of 1-hour). RELs are based on the most sensitive, relevant, adverse health effect reported in the medical and toxicological literature. Since margins of safety[98] are incorporated to address data gaps and uncertainties, exceeding an REL does not automatically indicate an adverse health impact. Acute RELs are applicable to all receptors, children and adults, and hazards are the ratio of estimated or measured concentrations and the REL.

Risk Characterization

Assessment of chronic human health impacts due to release of TAC associated with operation of the proposed project assumes that receptors are exposed to concentrations of TACs over 9- and 30- year periods for off-site residential receptors; and a 25-year period for off-site workers.

For construction, location and magnitude of emissions were assumed to change as different portions of the project are begun and completed throughout the construction period. To incorporate this variability into the model, construction emissions were modeled separately for each year of construction from 2017 to 2023. Risks for receptors were calculated by grid point for each year of construction and then added together to determine total risk by grid point for the construction period. For the portion of the receptors' exposure period that was longer than the construction period, construction emissions were assumed to be zero.

TAC concentrations for operations were not modeled as the proposed project would not result in changes in operational TAC emissions. See Section 4.1.1 for an explanation of why the proposed project would not change operational air pollutant emissions.

Grid points were identified where construction impacts were likely to be maximal. Concentrations of TAC in air at these locations then formed the basis for the risk estimate. Such risk estimates are overly-conservative for most people living, working, recreating, or attending school near LAX.

For the proposed project, grid points were analyzed along the Airport fence-line and at intervals within the study area. In addition, several on-Airport grid points that are not located within the proposed project boundaries were also modeled (for on-Airport/off-site workers) and in the center of LAX (for on-Airport/on-site construction workers). These locations represent maximally exposed individuals (MEI), based on dispersion modeling (see Section 4.1.1, under air quality, above). Concentrations of each TAC at these nodes were used in calculating cancer risk, and chronic and acute non-cancer health hazard estimates. These calculations were used to identify locations with maximum cancer risks and maximum non-cancer health hazards and serve as to assist determinations of significance.

MEI estimates were partially land use specific. On-Airport locations were used to identify commercial and on-airport worker TAC concentrations. For off-airport locations, land uses were designated as either residential, commercial,

---

96 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals, Accessed January 19, 2017.

97 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals, Accessed January 19, 2017.

98 Margin of safety is a ratio of the no-observed-effect level to the estimated exposure dose. Margins of safety are incorporated in the development of toxicity values to account for differences in dose-response among individuals. For example, the same dose of alcohol may have a greater effect on a woman than a man, not only because a woman is smaller in body size but also because men and women metabolize alcohol at different rates.

or residential/commercial based on review of aerial photos and then evaluated for the receptors appropriate for the land use designations (workers at commercial locations; adult and child residents at residential locations; etc.). Locations of schools, hospitals, nursing homes, daycare facilities, etc. were identified as sensitive receptor locations and designated as residential/commercial so that these grid points would be evaluated for both worker and residential receptors. The modeled receptor locations are shown on **Figure 4.1.1-1**.

Concentrations of TAC as modeled at the fence-line (LAX boundary) represent the highest or near-highest concentrations that could be considered "off-airport." Fence-line receptors were used for the criteria pollutant impact analysis in Section 4.1.1, under air quality (above). Since no homes are located on the fence-line and grid points were identified for special receptors outside of the fence-line to represent the nearest off-airport worker locations as well as nearest residential locations, fence-line grid points were not evaluated as receptors in the human health risk analysis. Concentrations in areas where people actually work or live would be lower than that at the fence-line.

Evaluating Cancer Risks

Cancer risks were estimated by multiplying exposure estimates for carcinogenic chemicals by corresponding cancer slope factors. Results were risk estimates expressed as the probability of developing cancer. Cancer risks were based on an exposure duration of 30 years for adult residents, 9 years for child residents, and 25 years for workers. Years of exposure after construction assume a risk increment of 0 from operations. Impacts of exposure to multiple TAC were accounted for by adding cancer risk estimates for exposure to all carcinogenic chemicals.

Chronic Non-Cancer Health Hazards

Chronic non-cancer health hazard estimates were calculated by dividing exposure estimates by RELs. RELs are estimates of highest exposure levels that would not cause adverse health effects even if exposures continue over a lifetime. The ratio of exposure concentration to reference concentration is termed the hazard quotient (HQ). A HQ greater than one indicates an exposure concentration greater than an exposure that is considered safe. A ratio that is less than one indicates that project-related (incremental) exposure was less than the highest exposure level that would not cause an adverse health effect and, hence, no impact to human health is likely. Risks of adverse effects cannot be estimated using reference doses. However, because reference concentrations are developed in a conservative fashion, HQs only slightly higher than one are generally accepted as being associated with low risks (or even no risk) of adverse effects, and that potential for adverse effects increases as the HQ gets larger.

Impacts of exposure to multiple chemicals were accounted for by adding estimated HQs for non-carcinogenic chemicals that affect the same target organ or tissue in the body. Addition of HQs for TAC that produce effects in similar organs and tissues results in a Hazard Index (HI) that reflects possible total hazards. Several TAC have effects on the respiratory system including acetaldehyde, acrolein, formaldehyde, xylenes, and diesel particulates. Non-cancer health hazards for the proposed project were calculated for the respiratory system which accounted for essentially all non-cancer health hazards.

Acute Non-Cancer Health Hazards

Acute non-cancer risk estimates were calculated by dividing estimated maximum 1-hour TAC concentrations in air by acute RELs. An acute REL is a concentration in air below which adverse effects are unlikely for people, including sensitive subgroups, exposed for a short time on an intermittent basis. In most cases, RELs are estimated on the basis of an 1-hour exposure duration. USEPA defines intermittent exposure as an exposure lasting less than 24 hours and occurring no more than monthly. RELs do not distinguish between adults and children, but are established at levels that are considered protective of sensitive populations. Since margins of safety are incorporated to address data gaps and uncertainties, exceeding the REL does not automatically indicate an adverse health impact. OEHHA has developed acute RELs for several of the TAC of concern.

Short-term concentrations for TAC associated with construction of the proposed project were estimated using the same AERMOD used to estimate annual average concentrations, but with the model option for 1-hour maximum concentrations selected. These concentrations represent the highest predicted concentrations of TAC. Acute non-cancer health hazards were then estimated at each grid point by dividing estimated maximum 1-hour TAC

concentrations in air by acute RELs. A HI equal to or greater than 1, the threshold of significance for acute non-cancer health impacts, indicates some potential for adverse acute non-cancer health impacts. A HI less than 1 suggests that adverse acute non-cancer health impacts are unlikely.

Occupational Health Hazards

Impacts to on-site workers were evaluated by comparing estimated 8-hour air concentrations of TAC at on-site locations under the proposed project for construction to the California Occupational Safety and Health Administration (CalOSHA) 8-hour Time-Weighted Average Permissible Exposure Levels (PEL-TWAs).[99]

Population-based Risks

When MEI risks exceed threshold levels, CalEPA guidance indicates that population-based risks should be calculated. This type of assessment estimates the "cancer burden" that might be experienced within an exposed population. Cancer burden is the sum of individual risks for people living in the study area. For example, if 100,000 people live in an area that experiences an increased cancer risk of 10 in 1 million due to the proposed project, the chance of a single case of cancer in this population caused by the proposed project would be 1 in 100 (100,000 times 10 x 10^{-6}).

Population-based risk conservatively assumes that a population (not necessarily the same individuals) will live within the study area over a 70-year lifetime period. In this sense, cancer burden calculations are more conservative than individual cancer risks calculated on an exposure duration of 30 years.

Cancer burden was calculated by multiplying incremental cancer risk calculated for a 70-year resident at a grid point by the number of people who live in the census block associated with that grid point, and adding up the estimated number of potential cancer cases across each zone of impact (10^{-6}, 10^{-5}, etc.) in the study area. In some cases, a single census block may contain more than one modeled grid point. When this situation occurred, the average of the calculated risks for the grid points within the census block was used for the calculation. Cancer burden is a single number for each zone of impact that is intended to estimate the theoretical number of cancer cases within the population that is exposed to the project-related emissions for a lifetime (70 years). As discussed previously, cancer risk for years after construction has completed are considered to be zero.

The estimate is conservative for several reasons. It assumes that the population is stable over the time of the evaluation, that individuals in the population are equally sensitive to the toxic effects of TAC, that sensitivity is near the maximum possible based on current data, that all people in the population live long enough for cancer effects to be observed, that people in a given zone spend essentially all of their time in that zone, and that the basic approach to assessing cancer risk, which itself involves use of conservative methods, is reasonably accurate. Thus, estimates of cancer burden are likely to be substantially exaggerated.

A similar approach was used for the assessment of population-based hazard impacts. However, instead of multiplying the hazard indices, zones of impact were identified as where hazard indices exceeded 0.5, 1.0, and in increments of 1.0. Population counts for each zone of impact were summed to provide a single number for each zone of impact. As with the cancer burden, when a single census block contained more than one modeled grid point, the average of the calculated hazard indices for the grid points within the census block was used to determine which zone of impact the census block was representative. Population estimates for acute, 8-hour, and chronic health impacts are presented separately. These calculations are subject to much of the same conservatism as discussed above for cancer risks.

Uncertainties

Uncertainties are present in all facets of HHRA. For this analysis, uncertainties identified included uncertainties associated with emission estimates and dispersion modeling, evaluation of sensitive receptor populations, exposure

[99] California Occupational Safety and Health Administration, Table AC-1, Permissible Exposure Limits for Chemical Contaminants, Available: https://www.dir.ca.gov/title8/5155table_ac1.html, Accessed January 19, 2017.

parameter assumptions, toxicity assessment, use of 2015 OEHHA Air Toxics Methodology[100] instead of Risk Assessment Guidance for Superfund (RAGS)[101] methodology, and interactions among acrolein and criteria pollutants. Detailed discussions of these uncertainties associated with the HHRA are presented in Appendix B.1.3. The approach used in this EIR health impact analysis uses conservative assumptions and methods to account for multiple uncertainties. This approach is appropriate for assessing the health risks associated with the proposed project.

4.1.2.2 Existing Conditions

4.1.2.2.1 Regulatory Setting

Federal

The USEPA provides guidance on performing HHRAs for certain purposes through its Office of Emergency and Remedial Response publication, *Risk Assessment Guidance for Superfund, Vol I, Human Health Evaluation Manual* (Part A), Interim Final, EPA/540/1-89/002, published December, 1989. The FAA does not prepare or use HHRAs in the airport context.

State

The California Air Resources Board's (CARB) statewide comprehensive air toxics program was established in the early 1980's. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics.

In September 1987, the California Legislature established the AB 2588 air toxics "Hot Spots" program. It requires facilities to report their air toxics emissions, ascertain health risks, and to notify nearby residents of significant risks. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731 which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan. Beginning in 2000, the CARB has adopted diesel risk reduction plans and measures to reduce diesel particulate matter (DPM) emissions and the associated health risk. These are discussed in more detail in the following section.

California Air Resources Board Air Toxics Control Measure (ATCM)

In 2004, CARB adopted a control measure to limit commercial heavy duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. In general, it prohibits idling for more than 5 minutes at any location.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment such as bulldozers, loaders, backhoes, and forklifts, as well as many other self-propelled off-road diesel vehicles. A CARB regulation that became effective on June 15, 2008, aims to reduce emissions by installation of diesel soot filters and encouraging the replacement of older, dirtier engines with newer emission controlled models. The regulation requires that fleets limit their unnecessary idling to 5 minutes; there are exceptions for vehicles that need to idle to perform work (such as a crane providing hydraulic power to the boom), vehicles being serviced, or in a queue waiting for work. A prohibition against acquiring certain vehicles (e.g., Tier

---

100 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, Available: http://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0, Accessed January 19, 2017.

101 RAGS (Risk Assessment Guidance for Superfund) establishes methods used for estimating human health risks associated with chemical exposure. RAGS Part A established general methods for such assessment for exposure via inhalation of chemicals in air, but these methods were superseded by new methods published in RAGS Part F. This change in guidance occurred during the life of the LAX Master Plan environmental analysis, such that older risk assessments used RAGS Part A methods, but later assessments used updated RAGS Part F methods.

0 and Tier 1) began on March 1, 2009. Implementation of the fleet averaging emission standards is staggered based on fleet size, with the largest operators to begin compliance in 2015.[102] By 2020, CARB estimates that DPM will be reduced by 74 percent and smog forming NO_X (an ozone precursor emitted from diesel engines) by 32 percent, compared to what emissions would be without the regulation.[103]

The CalEPA provides guidance on performing an HHRA through its OEHHA publications:

- Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants, March 1999;
- Air Toxics Hot Spots Program Risk Assessment Guidelines, Part II: Technical Support Document for Describing Available Cancer Potency Factors, updated May 2009;
- Air Toxics Hot Spots Program Risk Assessment Guidelines, Part III: Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels, June 2008;
- Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis, August 2012; and
- Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015.

Regional/Local

SCAQMD has jurisdiction over the air quality of the Basin. The SCAQMD has determined that the significance criterion for cancer health risks is a ten in one million increase in the chance of developing cancer. The SCAQMD has also adopted a significance criterion for cancer burden. The cancer burden is the estimated increase in the occurrence of cancer cases in a population as a result of exposures to TAC emissions. The SCAQMD has determined that the significance criterion for cancer burden is greater than 0.5 excess cancer cases in areas with an incremental increase in cancer risk greater than or equal to 1 in 1 million. The significance of non-cancer (acute and chronic) risks is evaluated in terms of HIs for different endpoints. The SCAQMD threshold for non–cancer risk for both acute and chronic HI is 1.0.

4.1.2.2.2 Existing Health Risk in the Project Area

In June 1987, the SCAQMD published the first *Multiple Air Toxics Exposure Study (MATES),* which was the most comprehensive air toxics study ever conducted in an urban environment. This original study has been updated several times; the most recent study, MATES-IV,[104] was published in May 2015. The study estimates the cancer risk from TAC emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of TACs, and a modeling effort to fully characterize health risks for those living in the Basin. The study includes a series of maps showing regional trends in estimated outdoor inhalation cancer risk from toxic emissions. These risk maps depict inhalation cancer risk due to modeled outdoor TAC pollutant levels, and do not account for cancer risk due to other types of exposure. The study found that the largest contributors to inhalation cancer risk are diesel engines. According to MATES-IV, cancer risks in the South Coast Air Basin range from 320 in one million to 480 in one million, with an average of 418 in one million. These cancer risk estimates are relatively high (although substantially lower than those found in MATES-III) and indicate that current impacts associated with ongoing releases of TAC (e.g., from vehicle exhaust) and from sources of TAC from past and present projects in the region are substantial.

---

102 California Air Resources Board, In-Use Off-Road Diesel Vehicle Regulation, Overview, Revised February 2014, Available: http://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf, Accessed November 2016.

103 California Air Resources Board, Facts about Emissions and Health Benefits of Regulation for In-Use Off-Road Diesel Vehicles, revised September 20, 2007, Available: http://www.arb.ca.gov/msprog/ordiesel/documents/OFRDDIESELhealthFS.pdf, Accessed November 2013.

104 South Coast Air Quality Management District, Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV, May 2015, Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed January 19, 2017.

As part of the MATES III Study, the SCAQMD has prepared a series of maps that show regional trends in estimated outdoor inhalation cancer risk from toxic emissions, as part of an ongoing effort to provide insight into relative risks. The maps' estimates represent the number of potential cancers per million people associated with a lifetime of breathing air toxics (24 hours per day outdoors for 70 years) in parts of the area. The estimated lifetime cancer risk from exposure to TACs for those residing within the vicinity of the proposed project is estimated at 884 cancers per million, while the vast majority of the area surrounding LAX ranges between 500 to 1,200 cancers per million. [105] However, the visual resolution available in the map is 1 kilometer by 1 kilometer and, thus, impacts for individual neighborhoods are not discernible on this map. In general, the risk of the project site is comparable with other areas in the Los Angeles area; the risk from air toxics is lower near the coastline, and increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

The SCAQMD also provides guidance on performing an HHRA through its publication, *Supplemental Guidelines for Preparing Risk Assessment for the Air Toxics Hot Spots Information and Assessment Act* (AB 2588), June 2015. This document incorporates the updated risk methodologies established by OEHHA's 2015 Guidance Manual that take into account for early childhood exposure. According to MATES-IV, although in general there has been an overall Basin-wide reduction in air toxics concentrations since MATES-III, application of the updated risk estimation methods recently adopted by OEHHA result in an estimated population weighted risk across the South Coast Air Basin range of 897 per million, an increase in cancer risks.

The CARB also prepares a series of maps that show regional trends in estimated outdoor inhalable cancer risk from air toxic emissions. The Year 2010 Los Angeles County Central map, which is the most recently available map to represent existing conditions, shows cancer risk ranging from 500 to 1,500 cancers per million in the project area, which is generally consistent with the SCAQMD's risk maps.[106]

The data from the SCAQMD and CARB provide a slightly different range of risk. This difference is primarily related to the fact that the SCAQMD risk is based on monitored pollutant concentrations and the CARB risk is based on dispersion modeling and emission inventories. Regardless, the SCAQMD and CARB data show that an inherent health risk associated with living in urbanized areas of the Basin, where mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors to the overall risk.

Sources of Toxic Air Contaminants of Concern

Baseline sources of TACs at LAX include both stationary and mobile sources. Stationary sources consist of aircraft maintenance facilities, the existing fuel farm, and the LAX Central Utilities Plant (CUP). Mobile sources of TACs include aircraft, ground service equipment, and on- and off-airport vehicles. These sources generate a number of TACs of concern, including volatile organics, polycyclic aromatic hydrocarbons, metals, and other constituents.

Exposed Populations

Screening-level air dispersion modeling conducted for the LAX Master Plan Final EIS/EIR indicated that the greatest area of human health impact from Airport activities is confined to the Airport property (see Section 4.1.1, under air quality, above). However, health risks from LAX may accrue to populations in the nearby area. The exposed population within this area of impact includes workers, residents, and sensitive receptors such as schools, hospitals, and nursing. The Airport is bound to the north and south by residential areas which are likely to contain populations that are particularly sensitive to air pollution. These population groups include children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases). Sensitive land uses in close proximity to the project site include the following:

- The El Segundo residential neighborhood located approximately 1,300 feet to the south of Runway 7R-25L.
- The Westchester residential neighborhood located approximately 1,300 feet to the north of Runway 6L-24R.

---

105 South Coast Air Quality Management District, Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk, Available: http://www3.aqmd.gov/webappl/matesiii/, accessed August 11, 2016.

106 California Air Resources Board, Cancer Inhalation Risk: Local Trend Maps, Available: http://www.arb.ca.gov/ch/communities/hlthrisk/cncrinhl/rskmapvwtrend.htm.400, Accessed January 19, 2017.

4.1.2.3 Thresholds of Significance

Significance determinations for health impacts are assessed as incremental increases or decreases in cancer risks and non-cancer health hazards. A significant[107] incremental impact to human health would occur if changes related to construction of the proposed project would result in one or more of the following conditions:

- An increased incremental cancer risk[108] greater than, or equal to, 10 in one million (10×10^{-6}) for potentially exposed off-site workers or residents.
- A cancer burden greater than, or equal to 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact.
- A total incremental chronic hazard index[109] greater than, or equal to, one for any target organ system at any receptor location.
- A total incremental acute HI greater than, or equal to, one for any target organ system at any receptor location.
- Exceedance of Permissible Exposure Limits - Time Weighted Average or Threshold Limit Values for workers.

The thresholds listed above are based on SCAQMD guidance.[110] Thresholds for workers are based on standards developed by CalOSHA.

4.1.2.4 Impacts Analysis

The following analysis pertains to the construction-related impacts of the proposed project. Air concentrations for TAC were developed using emissions estimates and dispersion modeling. Using these emission estimates, exposure parameters for receptors and current toxicity values, cancer risks and chronic non-cancer health hazards were calculated for adult residents, resident children ages 0 to 9 years, and off-airport workers at locations where air concentrations for TAC were predicted. Appendix B.1.3 provides detailed health risk modeling data supporting the impact analyses.

For this analysis, 970 grid points (which include both commercial, non-sensitive, and sensitive receptor locations) were analyzed within the study area in the vicinity of the Airport for each construction year from 2017 to 2023. These locations are shown on **Figure 4.1.1-1**.

The concentrations at these locations represent maximum concentrations of TAC predicted by the air dispersion modeling, and can be used to evaluate exposure to MEI. By definition, MEI documents a ceiling for risks and hazards for off-airport residential and commercial receptors. These calculations assumed that people live and work within this study area for the entire exposure duration. This assumption is conservative. Many people that live in the study area will work, shop, travel, recreate and participate in other activities outside of the study area.

4.1.2.4.1 Cancer Risks

Peak construction-related cancer risks for MEI are presented in **Table 4.1.2-2** and summarized in the following sections; calculations are presented in Appendix B.1.3. As shown, unmitigated construction-related cancer risks would be less than significant for adult workers as well as adult and child residents.

---

107 The term "significant" is used as defined in CEQA and does not imply an independent judgment of the acceptability of risk or hazard.

108 Incremental cancer risk is defined as the difference in cancer risks between the proposed Project and the Without Project condition.

109 For purposes of this analysis, a health hazard is any non-cancer adverse impact on health. (Cancer-related risks are addressed separately in this analysis.) A chronic health hazard is a hazard caused by repeated exposure to small amounts of a TAC. An acute health hazard is a hazard caused by a single or a few exposures to relatively large amounts of a chemical. A hazard index is the sum of ratios of estimated exposures to TAC and recognized safe exposures developed by regulatory agencies.

110 South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed August 23, 2016.

Table 4.1.2-2
Incremental Peak Construction-Related Cancer Risks for Maximally Exposed Individuals

Receptor Type	Cancer Risks (per million people)	Threshold (per million people)	Exceeds Threshold?
Adult Resident, 30 years	3.4	10	No
Child Resident, 9 years	3.5	10	No
Adult Worker, 25 years	1.0	10	No
Source: CDM Smith, December 2016. Prepared By: CDM Smith, January 2017			

Residents (Adult and Child)

For construction-related cancer risks, adult and child residents were evaluated at residential and residential/commercial grid nodes[111]. Because construction of the proposed project is estimated to be approximately six years and four months, incremental cancer risk for adult residents was estimated assuming seven years of construction; following completion of construction, it was assumed that adult residents were exposed to no other project-related TAC impacts for the remaining 23 years of the 30-year exposure period.

Since the exposure period for a child resident is nine years, which is greater than the seven-year construction scenario, the cancer risk for child residents was estimated assuming seven years of construction; following completion of construction, it was assumed that the child residents were exposed to no other project-related TAC impacts for the remaining two years of the nine-year exposure period.

Incremental cancer risk for an adult resident at the peak location during construction is estimated to be 3.4 in one million, below the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk for adult resident (approximately 89 percent) followed by hexavalent chromium, contributing approximately nine percent. DPM is primarily an emission from diesel construction equipment, haul trucks, and concrete trucks. The peak cancer risk location for adult residents is shown on **Figure 4.1.2-1**.

Adult Worker

For the construction scenario, adult workers were evaluated at on and off-airport grid nodes.[112] Because the exposure period of the adult worker is 25 years and construction of the project is estimated to be six years and four months, incremental cancer risk for the worker was estimated assuming seven years of construction; following completion of construction, it was assumed that adult workers were exposed to no increased operational impacts for the remaining 18 years of the 25-year exposure period.

Construction-related cancer risks for adult workers at the peak off-airport location are estimated to be one in one million, below the threshold of significance of 10 in one million. Similarly, to adult residents, DPM would contribute to the majority of the cancer risk for adult workers (approximately 94 percent) followed by hexavalent chromium, contributing approximately five percent. The peak cancer risk location for adult workers is shown on **Figure 4.1.2-1**.

4.1.2.4.2 Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for construction impacts associated with the proposed project are provided in **Table 4.1.2-3**. Hazard indices are shown for each year of construction. As shown, chronic non-cancer human health hazards would be less than significant for both residents and workers.

[111] Residents were evaluated at residential and residential/commercial grid nodes. They were not evaluated at the fence-line and commercial grid nodes.

[112] Workers were evaluated at commercial and residential/commercial grid nodes. They were not evaluated at the fence-line and residential grid nodes.

Resident (Adult and Child)

The maximum HI for a resident living at the peak hazard location for a single year of construction of the proposed project is 0.009, projected to occur in 2021. The peak residential hazard location is shown on **Figure 4.1.2-1**. Non-cancer hazard indices for adult residents and child residents are the same because the OEHHA methodology does not normalize hazard indices to body weight. As shown in **Table 4.1.2-3**, all incremental chronic non-cancer health hazards for residential adults and for young children are would be below the significance threshold of one.

Adult Worker

The maximum HI for an adult worker at the peak hazard location for a single year of construction of the proposed project is 0.037, projected to occur in 2021. The peak commercial hazard location is shown on **Figure 4.1.2-1**. All incremental chronic non-cancer health hazards for adult workers would be below the significance threshold of one.

Table 4.1.2-3
Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals from Project Construction

Year	Resident[1/]	Adult Worker[1/]	Significance Threshold	Exceeds Threshold?
2021	0.009	0.037	1	No

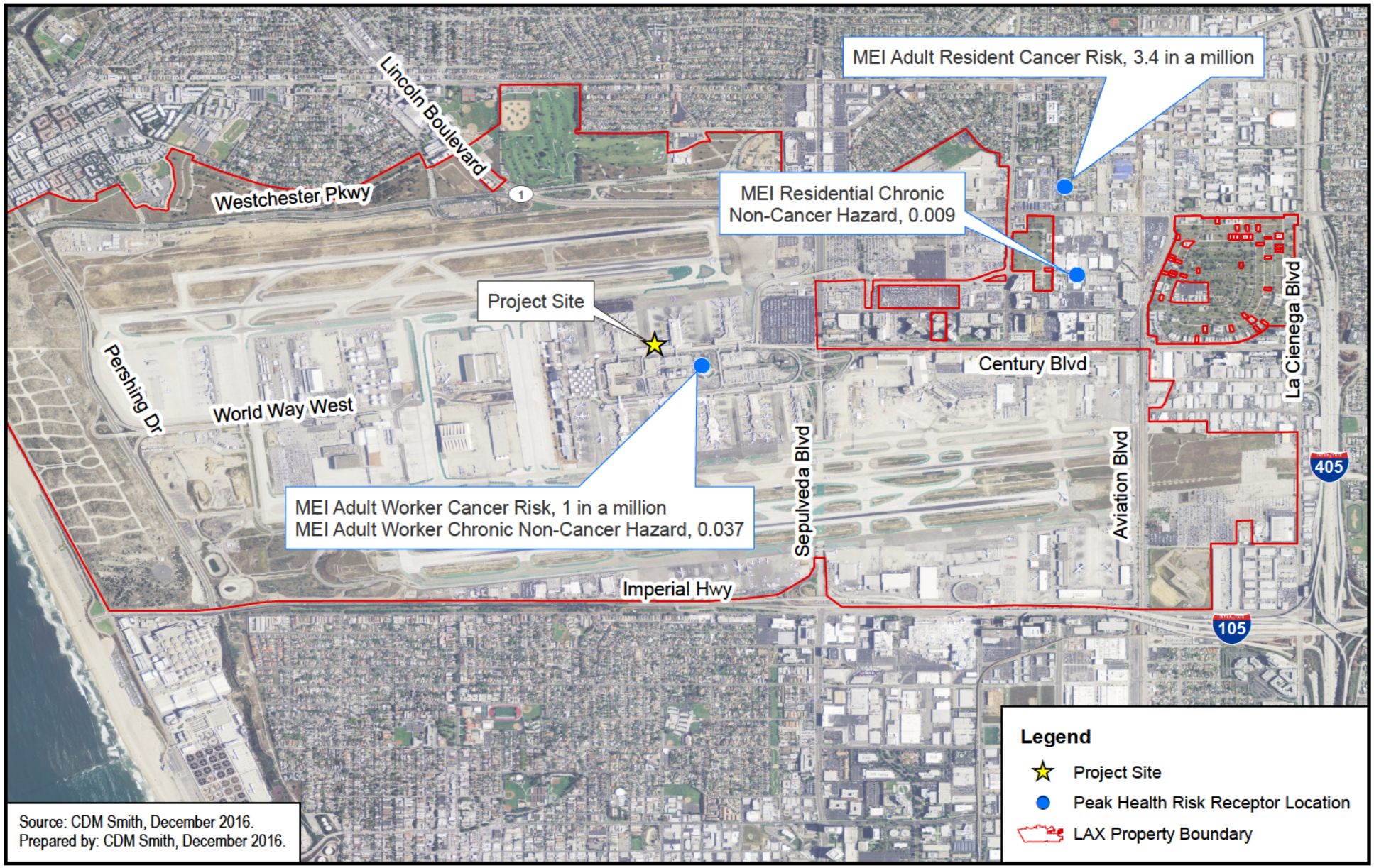
Note:
1/ Hazard indices are unitless.
Source: Appendix B.1.3 of this EIR.
Prepared By: CDM Smith, January 2017

4.1.2.4.3 Acute Non-Cancer Health Hazards

Acute non-cancer health hazards were evaluated for the peak emission year of construction – 2021. The year 2021 is estimated to have the peak diesel exhaust emissions as well as the peak overall emissions for particulate matter. One-hour exposure durations were used to represent non-worker receptors who would be exposed while moving through or near LAX. Eight-hour exposure durations were used to represent workers who would be exposed and on-site for longer periods of time. Both residents and workers were modeled for both exposure scenarios to fully capture any potential risk to residents or workers due to construction of the proposed project.

A HI equal to or greater than one would indicate possible acute adverse health effects. For all receptors, the hazard quotient for acute exposure to all TACs are less than one. Hence, no adverse health impacts are projected. Also, note that TACs affect different organs in the body so the effects of acute exposure would not necessarily be additive between all TACs.

At their peak 1-hour concentrations, Arsenic and Nickel are responsible for 13 percent and 42 percent, respectively, of all predicted construction-related acute non-cancer health hazards. Benzene is responsible for 13 percent of all predicted acute non-cancer health hazards associated with construction of the proposed project. Formaldehyde have a contribution of 23 percent to the total acute non-cancer. Acrolein, which is associated with aircraft operations, results are mentioned here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects. Acrolein as a contribution to non-cancer health hazards associated with construction of the proposed project only contributes 0.55 percent to the overall 1-hour acute non-cancer health risk. Maximum acute non-cancer health hazards associated with a 1-hour exposure to these chemicals from the proposed project construction are summarized in **Table 4.1.2-4**.



LAX Terminals 2 and 3 Modernization Project	**Peak Unmitigated Construction Health Risks**	Figure **4.1.2-1**

Table 4.1.2-4
Construction-Related Acute (1-Hour) Non-Cancer Health Hazards

	Arsenic[1/]	Nickel[1/]	Benzene[1/]	Formaldehyde[1/]	Total Risk	Significance Threshold	Exceeds Threshold?
On-Site Worker	0.007	0.023	0.007	0.013	0.055	1	No
Off-Site Worker	0.003	0.009	0.003	0.004	0.022	1	No
Residential	0.003	0.008	0.003	0.008	0.024	1	No

Note:
1/ Hazard indices are unitless.
Sournce: Appendix B.1.3 of this EIR.
Prepared By: CDM Smith, January 2017

At their peak 8-hour concentrations, Arsenic, Manganese, and Nickel are responsible for 14 percent, 58 percent, and 11 percent, respectively, of all predicted construction-related acute non-cancer health hazards. Benzene is responsible for 14 percent of all predicted acute non-cancer health hazards associated with construction of the proposed project. Acrolein, which is associated with aircraft operations, results are mentioned here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects. Acrolein as a contribution to non-cancer health hazards associated with construction of the proposed project only contributes 0.30 percent to the overall 8-hour acute non-cancer health risk. Maximum acute non-cancer health hazards associated with an 8-hour exposure to these chemicals from the proposed project construction are summarized in **Table 4.1.2-5**.

Table 4.1.2-5
Construction-Related Acute (8-Hour) Non-Cancer Health Hazards

	Arsenic[1/]	Manganese[1/]	Nickel[1/]	Benzene[1/]	Total Risk	Significance Threshold	Exceeds Threshold?
On-Site Worker	0.033	0.137	0.026	0.033	0.238	1	No
Off-Site Worker	0.018	0.076	0.014	0.012	0.125	1	No
Residential	0.013	0.055	0.010	0.006	0.088	1	No

NOTE:
1/ Hazard indices are unitless.
Source: Appendix B.1.3 of this EIR.
Prepared By: CDM Smith, January 2017

4.1.2.4.4 Occupation Effects

Impacts to on-site workers during construction were evaluated above by comparing estimated 8-hour air concentrations of TAC at the on-site location under the proposed project for construction to RELs to determine HIs. As in the LAX Master Plan and Specific Plan Amendment Study EIRs,[113] it was determined that the CalOSHA 8-hour PEL-TWAs were inappropriate for addressing worker risk from a dispersion analysis. All TAC concentrations were less than significant by multiple orders of magnitude because CalOSHA 8-hour PEL-TWAs were developed for on-site real-time monitoring rather than dispersion analyses. The 1-hour and 8-hour REL comparisons

[113] City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017; City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, (SCH 1997061047), January 2013, Available: http://www.lawa.org/LAXSPAS/Reports.aspx, Accessed January 19, 2017.

presented above compare the same TACs as in the CalOSHA PEL-TWA thresholds to more conservative thresholds and therefore, have more appropriately already addressed the issue of occupational exposure. Based on that analysis, occupational risks would be less than significant.

4.1.2.4.5 Population-based Risks

The population-based cancer burden presented in this EIR was conducted in a conservative manner using the peak year of construction risk as a surrogate for each year of construction. Even with this conservative assumption, population-based cancer burden risk peaked at 0.11 excess cancer cases, which is less than the cancer burden threshold listed in Section 4.1.2.3 above (a cancer burden greater than, or equal to 0.5 excess cancer cases in areas within the greater than 1 in 1 million zone of impact); therefore, the cancer burden from the proposed project would also be less than the threshold of significance. The detailed cancer burden analysis is presented in Appendix B.1.3 of this EIR.

4.1.2.4.6 Summary of Unmitigated Impacts

The HHRA addressed incremental health impacts associated with implementation of the proposed project. The evaluation assessed cancer risks, chronic non-cancer health hazards, and acute non-cancer health hazards. The text below summarizes impact conclusions based on modeling estimates.

- Incremental cancer risks associated with unmitigated construction of the proposed project would be below the threshold of significance of 10 in one million for child resident, adult resident, and adult worker. Incremental cancer risk impacts from construction would be less than significant.
- The cancer burden would be less than significant.
- Occupational risks would be less than significant.
- Incremental chronic non-cancer hazard indices associated with construction of the proposed project would be below the threshold of significance for all receptor types (i.e., child resident, adult resident, and adult worker). Incremental chronic non-cancer impacts from construction would be less than significant.
- Incremental acute non-cancer hazard indices would be equal to or below the threshold of significance of 1 at all locations of modeled peak TAC concentrations for construction of the proposed project. Incremental acute non-cancer impacts would be less than significant for both workers and residents.

4.1.2.5 Cumulative Impacts

Unlike air quality, for which standards have been established that determine acceptable levels of pollutant concentrations, no standards exist that establish acceptable levels of human health risks or that identify a threshold of significance for cumulative health risk impacts. Therefore, the discussion below addresses cumulative health risk impacts, and project-related contributions to those impacts; however, no determination is made regarding the significance of cumulative impacts. Since these results are not used for significance determination, a general discussion of the cumulative impacts for the proposed project is provided. Based on information available from the SCAQMD and USEPA with respect to regional cancer risk estimates and TAC predictions, the geographic areas considered in the cumulative health risk impacts analysis include the South Coast Air Basin for cancer risk and the LAX area for non-cancer health hazards, as further described below.

4.1.2.5.1 Summary of Cumulative Impacts

Although no defined thresholds for cumulative health risk impacts are available, it is the policy of the SCAQMD to use the same significance thresholds for cumulative impacts as for the project-specific impacts analyzed in the EIR.[114] If cumulative health risks are evaluated following this SCAQMD policy, the project's contribution to the

[114] South Coast Air Quality Management District, White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix D, August 2003.

cumulative cancer risk would not be cumulatively considerable under the unmitigated construction scenario since the incremental cancer risk impacts of the proposed project for all receptors under this scenario would be below the individual cancer risk significance thresholds of 10 in one million.

In contrast to cancer risk, 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 1.0 while the cumulative threshold is 3.0. Based on this SCAQMD policy, chronic non-cancer hazard indices associated with airport emissions under the proposed project would not be cumulatively considerable. A detailed discussion of cumulative cancer risks and cumulative non-cancer hazards is provided below.

4.1.2.5.2 Cancer Risks

The SCAQMD has conducted a series of urban air toxics monitoring and evaluation studies for the South Coast Air Basin called MATES in the South Coast Air Basin.[115] The original study published in June 1987 has been updated several times; the most recent study, MATES-IV, was published in May 2015.[116] According to MATES-IV, although in general there has been an overall Basin-wide reduction in air toxics concentrations since MATES-III, application of the updated risk estimation methods recently adopted by OEHHA result in an estimated population weighted risk across the South Coast Air Basin of 897 per million, an increase in cancer risks. In fact, MATES-IV estimated that the estimated lifetime risks near the Ports of Los Angeles and Long Beach of over 2,500 per million from air toxics. These cancer risk estimates are high and indicate that current impacts associated with ongoing releases of TAC (e.g., from vehicle exhaust) and from sources of TAC from past and present projects in the region are substantial. The MATES-IV study is an appropriate estimate of present cumulative impacts of TAC emissions in the South Coast Air Basin. It does not, however, have sufficient resolution to determine the fractional contribution of current LAX operations to TAC in the airshed. Only possible incremental contributions to cumulative impacts can be assessed.

Meaningful quantification of future cumulative health risk exposure in the entire South Coast Air Basin is not possible. Moreover, the threshold of significance used to determine cancer risk impacts associated with the proposed project is based on the cancer risks associated with individual projects; this threshold is not appropriately applied to conclusions regarding cumulative cancer risk in the South Coast Air Basin.

However, based on the relatively high cancer risk level associated with TAC in air in the South Coast Air Basin (i.e., an additional 897 cancer cases per million according to MATES-IV), the proposed project (with a maximum estimated incremental cancer risk of 3.5 cancer cases per million) would not add substantially (less than 1 percent) to the already high cumulative cancer risk in the South Coast Air Basin. This small increase estimated for the proposed project would not be measurable in collected cancer statistics against urban background conditions in the South Coast Air Basin.

The above comparisons do not account for possible positive changes in air quality in the South Coast Air Basin in the future. SCAQMD and other agencies are consistently working to reduce air pollution. In particular, reductions in emissions of diesel particulates are being considered and implemented. Since DPM is the major contributor to estimated cancer risks, substantial reductions in diesel emissions would result in substantial reductions in cumulative cancer risks. These, and other such regulations intended to reduce TAC emissions within the South Coast Air Basin, would reduce cumulative impacts overall. While continued, if not increased, regulation by the SCAQMD of point sources as well as more stringent emission controls on mobile sources would reduce TAC emissions, whether such measures would alter incremental contributions of TAC releases to cumulative impacts under the proposed project cannot be ascertained.

---

115 General information on the original Multiple Air Toxics Exposure Study and subsequent updates conducted by South Coast Air Quality Management District, Available: http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies

116 South Coast Air Quality Management District, Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES-IV, May 2015, Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed January 19, 2017.

4.1.2.5.3 Chronic Non-Cancer Hazards

Acrolein is the TAC of concern that is responsible for the majority of all predicted chronic non-cancer health hazards associated with LAX operations. However, for the proposed project construction, chronic non-cancer health hazards are primarily attributable to DPM, chlorine, and manganese, and to a lesser extent arsenic, cadmium, nickel, benzene, and formaldehyde. In 2015, USEPA published an independent study of possible annual average air concentrations within the South Coast Air Basin associated with a variety of TAC, including acrolein, chlorine, and DPM (silicon and barium were not included).[117] These estimates provide a means for assessing cumulative chronic non-cancer health hazard impacts of airport operations in much the same manner as cumulative cancer risks were assessed using the MATES-IV results.

Within Los Angeles County, USEPA predictions[118] for annual average concentrations yield acrolein hazard indices by census tract ranging from 2 to 11, with an average of 3; DPM hazard indices ranging from 0.09 to 0.4, with an average of 0.2; and chlorine hazard indices ranging from 0.07 to 0.2, with an average of 0.09. Incremental hazard indices for the proposed project (**Table 4.1.2-3**) were estimated to range from 0.010 to 0.029, below the threshold of significance of one. Given the relatively small hazard indices associated with proposed project emissions, the proposed project would not add significantly to cumulative chronic non-cancer health hazards.

Because of the substantial uncertainties associated with the USEPA estimates[119], the cumulative analysis for chronic non-cancer health hazard impacts is semi-quantitative and based on a range of possible contributions. This cumulative analysis does not address the issue of interactions among acrolein and criteria pollutants. Such interactions cannot, at this time, be addressed in a quantitative fashion. A qualitative discussion of the issue is presented in the LAX Master Plan Final EIR[120] Technical Report S-9a, Section 7.

As discussed in the LAX Master Plan Final EIR (Section 4.24.1.2), limited data are available for describing acrolein emissions. Therefore, estimates of chronic non-cancer health hazards are very uncertain. Chronic non-cancer health hazards associated with the proposed project should only be used to provide a relative comparison to basin-wide conditions. These hazards should not be viewed as absolute estimates of potential health impacts. Moreover, USEPA's estimates are based on data from 2015 and are therefore several years old. Emissions from some important sources may have been reduced as a result of continuing efforts by SCAQMD and other agencies to improve air quality in the South Coast Air Basin. Finally, the estimates do not consider degradation of TAC in the atmosphere.

4.1.2.5.4 Acute Non-Cancer Hazards

Formaldehyde, and manganese are the primary TAC of concern in proposed project emissions that might be present at concentrations approaching the threshold for acute non-cancer health hazards. Predicted concentrations of TAC released from construction activities for the proposed project estimate that acute non-cancer health hazards would be below the significance threshold of one. The assessment of cumulative acute non-cancer health hazards follows the methods used to evaluate cumulative acute non-cancer health hazards presented in the LAX Master Plan Final EIR[121] (Section 4.24.1.7 and Technical Report S-9a, Section 6.3), incorporating updated National-Scale Air Toxics Assessment (NATA) tables from 2015. USEPA-modeled emission estimates by census tract were used to estimate annual average ambient air concentrations. These census tract emission estimates are subject to high

---

117 U.S. Environmental Protection Agency, 2011 National-Scale Air Toxics Assessment, 2015, Available: https://www.epa.gov/national-air-toxics-assessment/2011-national-air-toxics-assessment, Accessed January 19, 2017.

118 U.S. Environmental Protection Agency, 2011 National-Scale Air Toxics Assessment, 2015, Available: https://www.epa.gov/national-air-toxics-assessment/2011-national-air-toxics-assessment, Accessed January 19, 2017.

119 U.S. Environmental Protection Agency, 2011 National-Scale Air Toxics Assessment, 2015, Available: https://www.epa.gov/national-air-toxics-assessment/2011-national-air-toxics-assessment, Accessed January 19, 2017.

120 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

121 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

uncertainty, and USEPA warns against using them to predict local concentrations. Thus, for the analysis of cumulative acute non-cancer health hazards, estimates for each census tract within Los Angeles County were identified, and the range of concentrations was used as an estimate of the possible range of annual average concentrations in the general vicinity of the Airport. This range of concentrations was used to estimate a range of acute non-cancer hazard indices using the same methods as described in the LAX Master Plan Final EIR[122] (Section 4.24.1.7 and Technical Report S-9a, Section 6.1). The methodology entails converting the USEPA annual average estimates to maximum 1-hour average concentrations by dividing annual average estimates by 0.08. Maximum 1-hour average concentrations were then divided by the acute REL to calculate acute non-cancer hazard indices. The range of hazard indices was then used as a basis for comparison with estimated maximum acute non-cancer health hazards for the proposed project. The relative magnitude of acute non-cancer health hazards calculated on the basis of the USEPA estimates and maximum hazards estimated for the proposed project were taken as a general measure of relative cumulative impacts. Emphasis must be placed on the relative nature of these estimates. Uncertainties in the analysis preclude estimation of absolute impacts.

When USEPA annual average estimates are converted to possible maximum 1-hour average concentrations, acrolein acute non-cancer hazard indices are estimated to range from 0.2 to 1.3, with an average of 0.4; formaldehyde acute non-cancer hazard indices are estimated to range from 0.3 to 0.7, with an average of 0.5; and manganese acute non-cancer hazard indices are estimated to range from 0.03 to 0.1, with an average of 0.06 for locations within the HHRA study area. Predicted overall maximum incremental acute non-cancer health hazards for the proposed project associated with acrolein peaked at 0.0004; associated with formaldehyde peaked at 0.013; and associated with manganese peaked at 0.137. Results suggest that the acute non-cancer health hazards for the proposed project would not add significantly to total acute non-cancer health hazards for the proposed project. Therefore, acute non-cancer health hazards associated with the proposed project would not be cumulatively considerable.

4.1.2.6 Mitigation Measures

As described in Section 4.1.2.4, health risk impacts from construction of the proposed project would be less than significant and project-related contributions to significant cumulative impacts would not be cumulatively considerable. Therefore, no mitigation measures are required.

4.1.2.7 Level of Significance After Mitigation

Health risk impacts from construction of the proposed project would be less than significant.

4.1.2.8 Other Measures

As indicated in Section 4.1.2.4, health risk impacts from construction of the proposed project would be less than significant; therefore, no mitigation measures are required to reduce impacts. However, as discussed in Section 4.1.1.8, Standard Control Measure (Mitigation Measure) LAX-AQ-1, Construction-Related Air Quality Control Measures, and Mitigation Measure MM-AQ (T2/T3)-1, Preferential Use of Renewable Diesel Fuel, would be applied to the proposed project to reduce construction-related air pollutant emissions. Although developed to address air quality impacts, these mitigation measures would also reduce health risks associated with exposure to TAC.

[122] City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

This page left intentionally blank

4.2 Greenhouse Gas Emissions

4.2.1 Introduction

This greenhouse gas (GHG) analysis examines GHG and global climate change (GCC) impacts that would result from construction activities and operational energy changes associated with the proposed project. This section describes applicable Federal, State, and local regulations that address GHG emissions and GCC in California and the City of Los Angeles; existing climate conditions and influences on GCC are also described. The analysis accounts for energy[123] and resource conservation measures that have been incorporated into the proposed project, as well as pertinent State mandated GHG emission reduction measures. The analysis also assesses cumulative and project-related contributions to GCC that would result from the proposed project. Air quality effects associated with criteria pollutant (ambient air pollutant) emissions are discussed in Chapter 4.1, *Air Quality and Human Health Risk*, of this EIR. GHG emission calculations prepared for the proposed project are provided in Appendix B of this Draft EIR.

4.2.1.1 Global Climate Change (GCC)

Briefly stated, GCC is a change in the average climatic conditions of the earth, as characterized by changes in wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over GCC use these data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) developed several emission projections of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC predicted that the global mean temperature change from 2005 to 2100, given six ambient CO2 scenarios, could range from 1.5 to 4.8 degrees Celsius (C). Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.[124]

Climate models applied to California's conditions project that, under different scenarios, temperatures in California are expected to increase by 2.1 to 8.6 degrees Fahrenheit (F). Almost all climate scenarios include a continuing trend of warming through the end of the century given the substantial amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to the 2012 Report from the California Climate Change Center, the following climate change effects are predicted in California over the course of the next century.[125]

- A diminishing Sierra snowpack threatens the State's water supply, reduces generation of hydroelectric power, and increases the probability of wildfires along electrical transmission line corridors.
- Increasing temperatures, as noted above, of up to approximately 9 degrees F under the higher emission scenarios, leading to increases in the number of days when ozone pollution levels are exceeded in most urban areas.
- Coastal erosion along the length of California and sea water intrusion into the Sacramento-San Joaquin River Delta from rise in sea level. This would exacerbate flooding in already vulnerable regions.
- Increased vulnerability of forests due to pest infestation and increased temperatures.
- Increased challenges for the state's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Sacramento-San Joaquin River Delta.

---

123 See Section 6.5 Energy Impacts and Conservation in Chapter 6, *Other Environmental Considerations*, of this EIR for discussion of energy efficiency measures.

124 Intergovernmental Panel on Climate Change, Available: https://www.ipcc.ch/publications_and_data/publications_and_data.shtml, accessed November 18, 2015.

125 California Climate Change Center, Available: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf, accessed January 20, 2017.

- Increased electricity demand, particularly in the hot summer months.

As such, temperature increases would lead to adverse environmental impacts in a wide variety of areas, including: sea level rise, reduced snowpack resulting in changes to existing water resources, increased risk of wildfires, and public health hazards associated with higher peak temperatures, heat waves, and decreased air quality.

4.2.1.2 Greenhouse Gases

Parts of the earth's atmosphere act as an insulating blanket, trapping sufficient solar energy to keep the global average temperature in a suitable range. The blanket is a collection of atmospheric gases called GHGs. These gases – primarily water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) – all act as effective global insulators, reflecting back to earth visible light and infrared radiation. Human activities, such as producing electricity and driving vehicles, have elevated the concentrations of these gases in the atmosphere. Many scientists believe that these elevated levels, in turn, are causing the earth's temperature to rise. A warmer earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans.

Climate change is driven by "forcings" and "feedbacks." Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. A feedback is "an internal climate process that amplifies or dampens the climate response to a specific forcing."[126] The global warming potential (GWP) is "a measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide"[127] Individual GHG species have varying GWP and atmospheric lifetimes. The carbon dioxide equivalent (CO_2e) – the mass emissions of an individual GHG multiplied by its GWP – is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent metric. The reference gas for GWP is CO_2, which has a GWP of 1. Compared to CH_4's GWP of 25, CH_4 has a greater global warming effect than CO_2 on a molecule-per-molecule basis. **Table 4.2-1** identifies the GWP of several select GHGs.

Table 4.2-1
Global Warming Potentials and Atmospheric Lifetimes of Select Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100 Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	15	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Perfluromethane (CF_4)	50,000	7,390
PFC: Perfluroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800
Source: Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland, 2007: Changes in Atmospheric Constituents and in Radiative Forcing. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.[128]		
Prepared By: CDM Smith, May 2016		

[126] National Research Council of the National Academies, Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties, 2005.

[127] U.S. Environmental Protection Agency, Glossary of Climate Change Terms, Available: www.epa.gov/climatechange/glossary.html, accessed August 31, 2016.

[128] GWP values have been updated in IPCC's subsequent assessment report, the Fifth Assessment ReportHowever, in accordance with international and U.S. convention to maintain the value of the carbon dioxide "currency," GHG emission inventories are calculated using the GWPs from the IPCC Fourth Assessment Report.

In estimating the GHG emissions, the *GHG Protocol Corporate Accounting and Reporting Standard* (GHG Protocol), developed by the World Business Council for Sustainable Development and World Resources Institute,[129] provides standards and guidance for preparing a GHG emissions inventory. The standard is written primarily from the perspective of a business developing a GHG inventory. The GHG Protocol provides the accounting framework for nearly every GHG standard and program in the world from the International Standards Organization to the European Union Emissions Trading Scheme to The Climate Registry (Registry), as well as hundreds of GHG inventories prepared by individual companies.

The GHG Protocol divides GHG emissions into three source types of "scopes," ranging from GHGs produced directly by the business to more indirect sources of GHG emissions, such as employee travel and commuting. Direct and indirect emissions can be generally separated into three broad scopes as follows:

- Scope 1. All direct GHG emissions.
- Scope 2. Indirect GHG emissions from consumption of purchased electricity, heat, or steam (i.e., GHG emissions generated at the power plant that provides electricity at the demand of the site/facility).
- Scope 3. Other indirect (optional) GHG emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g., transmission and distribution losses) not covered in Scope 2, outsourced activities, waste disposal, and construction.

The Airport Council International (ACI) has an Airport Carbon Accreditation (ACA) program that evaluated an airport's GHG emissions according to similar principles.

4.2.2 Methodology

The assumptions used to estimate GHG emissions from construction sources are the same as those discussed in Section 4.1, *Air Quality and Human Health Risk*, Section 4.1.1.3, Methodology. The discussion below provides a description of methodology elements that are specific to analyzing GHG emissions.

GHG impacts are treated as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The California Natural Resources Agency (CNRA) noted in its Public Notice for the added sections on GHG, that the impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact. The Public Notice states:

> "While the Proposed Amendments do not foreclose the possibility that a single project may result in greenhouse gas emissions with a direct impact on the environment, the evidence before [CNRA] indicates that in most cases, the impact will be cumulative. Therefore, the Proposed Amendments emphasize that the analysis of greenhouse gas emissions should center on whether a project's incremental contribution of greenhouse gas emissions is cumulatively considerable."

It is the accumulation of GHGs in the atmosphere that may result in global climate change. Climate change impacts are cumulative in nature, and thus no typical single project would result in emission of such a magnitude that it, in and of itself, would be significant on a project basis. A typical single project's GHG emission will be small relative to total global or even statewide GHG emissions. Thus, the analysis of significance of potential impacts from GHG emissions related to a single project is already representative of the long-term impacts on a cumulative basis. As such, the assessment of significance is based on a determination of whether the GHG emissions from the proposed project represent a cumulatively considerable contribution to GCC.

A number of methodologies and significance thresholds have been proposed to analyze the impacts of GHG emissions on GCC. However, at the time of this analysis, no definitive thresholds or methodologies that are

[129] World Business Council for Sustainable Development and World Resources Institute, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, March 2004, Available: http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf, Accessed January 19, 2017

applicable to the proposed project have been formally adopted for determining the significance of the project's cumulative contribution to GCC in CEQA documents.

Various guidance documents, such as The Climate Registry General Reporting Protocol (version 2.1, January 2016);[130] the joint California Air Resources Board (CARB), California Climate Action Registry (CCAR), and International Council for Local Environmental Initiatives (ICLEI) Local Government Operations Protocol (LGOP) (version 1.1, May 2010);[131] the Association of Environmental Professionals (AEP) Community-wide GHG Emissions Protocol;[132] and the ACI ACA program propose generally consistent methodologies for preparing GHG inventories.[133] However, these methodologies have been developed for varying purposes and not specifically for CEQA. Relying on these guidance documents, this analysis addresses both direct and indirect GHG emissions, which are defined as follows:

- Direct Emissions: Direct sources of GHG emissions from the proposed project include on-airport stationary sources, including heating/cooling; operational changes to surface traffic activity and surface traffic flows within the Airport area; construction and operation equipment; construction haul trips; and construction worker commute trips.
- Indirect Emissions: Indirect sources of GHG emissions related to the proposed project include the consumption of purchased electricity, solid waste disposal, water usage, and wastewater treatment.

CARB believes that consideration of so-called indirect emissions provides a more complete picture of the GHG footprint of a facility: "As facilities consider changes that would affect their emissions – addition of a cogeneration unit to boost overall efficiency even as it increases direct emissions, for example – the relative impact on total (direct plus indirect) emissions by the facility should be monitored. Annually reported indirect energy usage also aids the conservation awareness of the facility and provides information" to CARB to be considered for future strategies by the industrial sector.[134] For these reasons, CARB requires the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, the California Office of Planning and Research (OPR) guidance for lead agencies conducting GCC analyses in CEQA documents indicates that lead agencies should "make a good-faith effort, based on available information, to calculate, model, or estimate…GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities."[135] Therefore, direct and indirect emissions have been calculated for the proposed project.

The proposed project would not change the number of airline passengers traveling to/through the Airport, or the number or nature of aircraft operations. Therefore, this analysis does not include increases in emissions from aircraft or associated emissions of auxiliary power units or ground support equipment.

4.2.2.1 Construction

GHG emissions associated with construction of the proposed project were calculated based on methodologies provided in The Climate Registry *General Reporting Protocol* (GRP) Version 2.1.[136] The GRP is the guidance

---

130 The Climate Registry, General Reporting Protocol, version 2.1, January 2016, Available: https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/, accessed January 20, 2017.

131 California Air Resources Board, Local Government Operations Protocol, version 1.1, Available: https://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf, accessed January 20, 2017.

132 Association of Environmental Professionals (AEP), Forecasting Community-Wide Greenhouse Gas Emissions and Setting Reduction Targets, Available: https://www.califaep.org/docs/AEP_Next_Steps_White_Paper.pdf, accessed January 20, 2017.

133 Airport Carbon Accreditation, Greenhouse Gas Protocol, Available: http://www.airportcarbonaccredited.org/airport/4-levels-of-accreditation/ghg-protocol.html, accessed January 20, 2017.

134 California Environmental Protection Agency, Air Resources Board, Planning and Technical Support Division Emission Inventory Branch, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32), October 19, 2007.

135 State of California, Office of Planning and Research, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, June 19, 2008, p. 5, Available: http://opr.ca.gov/docs/june08-ceqa.pdf, aaccessed April 2013.

136 The Climate Registry, General Reporting Protocol, Version 2.1, January 2016, Available: https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/, accessed January 20, 2017.

document that LAWA and other members of The Climate Registry must use to prepare annual GHG inventories for the Registry. Therefore, for consistency, the GRP also was used in this impact analysis. However, to adapt the GRP for CEQA purposes, a refinement to the GRP operational and geographical boundaries was necessary. The GRP requires all emissions to be reported, as well as all direct and indirect emissions owned or controlled by the reporting entity (in this case, LAWA).

In accordance with SCAQMD guidance, GHG emissions from construction have been amortized over the 30-year lifetime of the proposed project to enable comparison to SCAQMD and LA CEQA thresholds of significance (i.e., total construction GHG emissions were divided by 30).[137]

The proposed project-related construction sources for which GHG emissions were calculated include:

- Off-road construction equipment;
- On-road equipment and delivery/haul trucks; and
- Construction worker trips.

The parameters used to develop construction GHG emissions for these sources, including construction schedule, equipment usage, and load factors, are the same as those outlined for the construction criteria air pollutant emissions analysis, presented in Section 4.1, *Air Quality and Human Health Risk,* Section 4.1.1.3, with supporting information presented in Appendix B.1.1 of this Draft EIR.

4.2.2.2 Operations

With the additional square footage being added to the terminal as a result of the project, yearly operational GHG emissions associated with increased electrical demand for heating/cooling, and lighting of the additional building area would occur: see Chapter 6, *Other Environmental Considerations*. Additionally, the proposed project would be designed and constructed to meet the City of Los Angeles Green Building Code (LAGBC) Tier 1 requirements and incorporate energy reducing U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Silver level of sustainability measures, which will reduce these demands substantially compared with the existing facility. As a result, operations-related GHG emissions due to increased energy demands were assessed for the proposed project as compared to existing conditions.

4.2.3 Existing Conditions

4.2.3.1 Regulatory Setting

4.2.3.1.1 International and Federal Plans, Policies, and Regulations

International Governmental Panel on Climate Change (IPCC)

In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess "the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaption and mitigation." The initial task for the IPCC was to prepare a comprehensive review and recommendations with respect to the state of knowledge of the science of climate change; the social and economic impact of climate change, and possible response strategies and elements for inclusion in a possible future international convention on climate. Since its inception, the IPCC has delivered five comprehensive scientific reports about climate change, with the latest (the Fifth Assessment Report) released in four parts between September 2013 and November 2014.[138]

---

137 South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-9.

138 Intergovernmental Panel on Climate Change, History, Available: https://www.ipcc.ch/organization/organization_history.shtml, accessed November 18, 2015.

United Nations Framework Convention on Climate Change

On March 21, 1994, the U.S. joined other countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.[139]

Kyoto Protocol

The Kyoto Protocol is a treaty made under the UNFCCC. Countries can sign the treaty to demonstrate their commitment to reduce their emissions of GHGs or engage in emissions trading. More than 160 countries, accounting for 55 percent of global emissions, are under the protocol. The U.S. symbolically signed the Kyoto Protocol in 1998. However, in order for the Kyoto Protocol to be formally ratified, it must be adopted by the U.S. Senate, which has not been done to date. The original GHG reduction commitments made under the Kyoto Protocol expired at the end of 2012. A second commitment period was agreed to at the Doha, Qatar, meeting held December 8, 2012, which extended the commitment period to December 31, 2020.[140]

Massachusetts et al. v. Environmental Protection Agency et. al.

Massachusetts et al. v. Environmental Protection Agency et. al. (549 U.S. 497 [2007]) found that that the USEPA has statutory authority to regulate emissions of GHGs from motor vehicles, and that it had not justified its non-use of that authority in response to a petition to regulate GHG emissions from motor vehicles.[141]

Endangerment Finding

The USEPA subsequently published its endangerment finding for GHGs in the Federal Register,[142] which responds to the court case noted above. The USEPA Administrator determined that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. Although the endangerment finding discusses the effects of six GHGs, it acknowledges that transportation sources only emit four of the key GHGs: CO_2, CH_4, N_2O, and HFCs. Further, the USEPA Administrator found that the combined emissions of these GHGs from new motor vehicles contribute to air pollution that endangers the public health and welfare under the CAA, Section 202(a). On July 25, 2016, the USEPA made two findings under section 231(a)(2)(A) of the Clean Air Act (CAA) that: (1) concentrations of six well-mixed GHGs in the atmosphere endanger the public health and welfare of current and future generations (the endangerment finding), and (2) GHGs emitted from certain classes of engines used in certain aircraft are contributing to the air pollution—the mix of those six GHGs in the atmosphere—that endangers public health and welfare.[143]

GHG and Fuel Efficiency Standards for Passengers Cars and Light-Duty Trucks

In April 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles. Under these standards, CO_2 emission limits would decrease from 295 grams per miles (g/mi) in 2012 to 250 g/mi in 2016 for a combined fleet of cars and light trucks. If all of the necessary emission reductions were made from fuel economy improvements, then the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mpg in 2016. The agencies issued a joint Final Rule for a coordinated National

139 United Nations Framework Convention on Climate Change, Available: http://unfccc.int/2860.php, accessed November 18, 2015.

140 United Nations Framework Convention on Climate Change, Kyoto Protocol, Available: http://unfccc.int/kyoto_protocol/items/2830.php, accessed November 18, 2015.

141 Supreme Court of the United States, Massachusetts et al. v. Environmental Protection Agency et. al., Available: http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf, accessed November 18, 2015.

142 U.S. Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, Federal Register Vol. 74, No. 239, December 15, 2009, pp. 66496-66546.

143 U.S. Environmental Protection Agency, Regulatory Announcement, EPA Finalizes First Steps to Address Greenhouse Gas Emissions from Aircraft Engines, July 2016, Available: https://www3.epa.gov/otaq/documents/aviation/420f16036.pdf, accessed August 3, 2016.

Program for model years 2017 to 2025 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.[144]

GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty-vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011. The two agencies' standards reduce GHG emissions by 270 metric tons and to reduce oil consumption by 530 million barrels over the life of the affected vehicles.[145]

4.2.3.1.2 State Plans, Policies, and Regulations

The legal framework for GHG emission reduction has come about through Executive Orders, legislation, and regulation. The major components of California's climate change initiatives are reviewed below.

California Environmental Quality Act and Senate Bill (SB) 97

CEQA requires lead agencies to consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to raise sea levels, affect rainfall and snowfall, and affect habitat.

SB 97

SB 97, enacted in August 2007, requires the Office of Planning and Research (OPR) to prepare guidelines to submit to the California Natural Resources Agency (CNRA) regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA. The CNRA adopted amendments to the State CEQA Guidelines for GHG emissions on December 30, 2009. The amendments became effective on March 18, 2010. The guidelines apply retroactively to any incomplete EIR, negative declaration, mitigated negative declaration, or other related document, and are reflected in this EIR.[146]

CEQA Guidelines

CEQA Guidelines Section 15064.4 specifically addresses the significance of GHG emissions. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The revisions also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (CEQA Guidelines Section 15064(h)(3)). The CEQA Guidelines revisions do not, however, set a numerical threshold of significance for GHG emissions.

---

144 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010, Available: http://www3.epa.gov/otaq/climate/regulations/420f10014.pdf, accessed November 18, 2015.

145 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Adopt First-Ever program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, Available: http://www3.epa.gov/otaq/climate/documents/420f11031.pdf, accessed November 18, 2015.

146 California Senate Bill 97, August 24, 2007.

Title 24 Energy Standards

Although not originally intended to reduce GHG emissions, California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. The latest amendments were made in November 2013 and went into effect on July 1, 2014.[147] The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency in buildings results in fewer GHG emissions on a building-by-building basis.

Green Building Standards

The 2013 California Green Building Standards Code (24 CCR Part 11, CalGREEN) took effect January 1, 2014. The Green Building Standards, as updated (2016), require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. They also require separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

California Assembly Bill 1493 (AB 1493) – Pavley

Enacted on July 22, 2002, this bill required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB apply to 2009 through 2016 vehicles. CARB estimated that the regulation would reduce GHG emissions from the light-duty and passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030, compared to recent years. In 2011, the U.S. Department of Transportation, USEPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley standards with the federal standards for passenger cars and light-duty trucks.[148] Emission estimates included in this analysis account for the Pavley standards.

California Advanced Clean Cars/Zero Emission Vehicle Program

In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles.

The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.), Zero Emission Vehicle Program, and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, are just beginning to enter the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation ensures that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets for all of California: by 2010, reduce GHG emissions to 2000 levels; by

147 2016 Energy Standards were made in June 2015 and have gone into effect on January 1, 2017.

148 California Environmental Protection Agency, Air Resource Board, EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars, Available: http://www.arb.ca.gov/newsrel/newsrelease.php?id=181, accessed November 19, 2015.

2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.[149]

Executive Order B-30-15

California Governor Edmund G. Brown issued Executive Order B-30-15 to reduce California GHG emissions to 40 percent below 1990 levels by 2030. [150]

California Assembly Bill 32 (AB 32)

AB 32, titled The California Global Warming Solutions Act of 2006 and signed by Governor Schwarzenegger in September 2006, requires CARB to adopt regulations to require the reporting and verification of Statewide GHG emissions and to monitor and enforce compliance with the program. In general, the bill requires CARB to reduce Statewide GHG emissions to the equivalent of those in 1990 by 2020. CARB adopted regulations in December 2007 for mandatory GHG emissions reporting. In December 2008, CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) outlining the state's strategy to achieve the 2020 GHG emissions limit. The Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California's energy sources, save energy, create new jobs, and enhance public health. On August 24, 2011, the Scoping Plan was re-approved by CARB, including the final supplement to its functional equivalent document, as required by CEQA. The First Update to the Scoping Plan, which will guide the continued development and implementation of the state's efforts to fight climate change, was approved by CARB on May 22, 2014.

Part of the Scoping Plan includes an economy-wide cap-and-trade program, which sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and established a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions. The final cap-and-trade plan was approved on October 21, 2011 and went into effect on January 1, 2013.[151]

At the time of Draft EIR preparation, CARB was preparing an update to the Scoping Plan to reflect the Executive Order B-30-15 and SB 32 GHG reduction target of 40 percent below 1990 levels by 2030.

California Senate Bill 32 (SB 32)

SB 32 California Global Warming Solutions Act of 2006 (Pavley) was approved in 2016 . SB 32 requires the ARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030. The ARB recently released a draft strategy for achieving that goal,[152] which takes into account the key programs associated with implementation of the AB 32 Scoping Plan, such as GHG reduction programs for cars, trucks, fuels, industry, and electrical generation, and builds upon, in particular, existing programs related to the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, much cleaner cars, trucks and freight movement, power generation for the State using cleaner renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet the State's energy needs.

California Senate Bill 375 (SB 375)

Under SB 375, each metropolitan planning organization (MPO) in the state is required to develop Sustainable Community Strategies through integrated land use and transportation planning and to attain per capita GHG reduction targets for passenger vehicles set by CARB by 2020 and 2035.[153] CARB issued an eight percent per capita reduction target for the SCAG region for 2020 and a target of 13 percent per capita reduction by 2035. SCAG

149 California Executive Order S-3-05, June 1, 2005.
150 California Executive Order B-30-15, April 29, 2015.
151 California Assembly Bill 32, September 27, 2006.
152 California Air Resources Board, The 2017 Climate Change Scoping Plan Update – The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, January 20, 2017.
153 California Senate Bill 375, September 30, 2008.

adopted the latest Regional Transportation Plan/Sustainable Community Strategies for the six-county Southern California region on April 7, 2016.

Executive Order S-01-07 and the Low Carbon Fuel Standard

California Executive Order S-01-07 established a statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020 from 2005. The Executive Order also mandated the creation of Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS requires that the lifecycle GHG emissions for the mix of fuels sold in California decline on average. Each fuel provider may meet the standard by selling fuel with lower carbon content, using previously banked credits from selling fuel that exceeded the LCFS, or purchasing credit from other fuel providers who have earned credits.[154]

Renewable Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, the Governor signed Executive Order S-14-08, which expands the State's Renewable (Energy) Portfolio Standard (RPS) to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-0911 requiring CARB, under its AB 32 authority, to adopt regulations to meet a 33 percent RPS target by 2020. The CARB regulations would use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an eight-year period beginning in 2012. CARB adopted the regulations in September 2010.

In March 2011, the Legislature passed SB X1-2, which was signed into law by the Governor the following Month. SB X1-2 requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020, and also established interim targets: 20 percent by December 31, 2013, and 25 percent by December 31, 2016. SB X1-2 also applies to publicly-owned utilities in California. According to data available from the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, approximately 20 percent of its electricity purchases in 2014 were from eligible renewable sources.[155] SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

4.2.3.1.3 Regional Plans, Policies, and Regulations

SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

SCAG adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) on April 4, 2012, and subsequent amendments of project lists were approved on June 6, 2013 and September 11, 2014. The 2012-2035 RTP/SCS aimed to reduce emissions from transportation sources to comply with SB 375 and meet SB 375 regional GHG emission reduction targets for light duty vehicles, improve public health, and reduce air emissions. On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 RTP/SCS.[156] The 2016-2040 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The Plan charts a course for closely integrating land use and transportation. It outlines more than $556.5 billion in transportation system investments through 2040.

Los Angeles Department of Water and Power Plan

The Los Angeles Department of Water and Power (LADWP) has developed an extensive strategy to reduce emissions from power plants which provide electrical power to the basin. In the 2015 Power Integrated Resource

---

154 17 California Code of Regulations, Section 95480 et seq., Low Carbon Fuel Standard.

155 City of Los Angeles, Los Angeles Department of Water and Power, Power Content Label, Available: https://ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-powercontentlabel;jsessionid=ZfB2XLXbyvcG28SPmnTRBgJnvNTdbqwQpy0jJF8F8yJyyrkp3TFv!194919507?_adf.ctrl-state=19x1t2m6hw_4&_afrLoop=455491631176092&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D455491631176092%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dcxq9wd2qh_4, accessed November 30, 2015.

156 Southern California Association of Governments, Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life, Adopted April 7, 2016, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx, Accessed January 19, 2017.

Plan, LADWP lays out a distinct strategy and framework for reducing reliance on coal-generated power through the selling off of its two largest coal-burning facilities in 2016 and 2025 respectively. These two facilities currently represent 40 percent of LADWP's total power generation. Additionally, LADWP will be increasing its renewable portfolio from 20 percent to 50 percent of its total provided power by 2030. This plan will result in substantial decreases in regional GHG emissions associated with regional electrical power demand.

4.2.3.1.4 Local Plans, Policies, and Regulations

Green LA

In May 2007, the City of Los Angeles introduced *Green LA – An Action Plan to Lead the Nation in Fighting Global Warming* (Green LA).[157] Green LA presents a framework targeted to reduce the City's GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of renewable energy to 35 percent by 2020 in combination with promoting water conservation, improving the transportation system, reducing waste generation, greening the ports and airports, creating more parks and open space, and greening the economic sector. Green LA identifies objectives and actions in various focus areas, including airports. The goal for LA's airports is to "green the airports," and the following actions are identified: 1) fully implement the Sustainability Performance Improvement Management System; 2) develop and implement policies to meet LEED® green building rating standards in future construction; 3) improve recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and 4) evaluate options to reduce aircraft-related GHG emissions.[158]

Climate LA

In 2008, the City of Los Angeles followed up Green LA with an implementation plan called *Climate LA – Municipal Program Implementing the Green LA Climate Action Plan* (Climate LA).[159] A Departmental Action Plan for LAWA is included in Climate LA, which identifies goals to reduce CO_2 emissions 35 percent below 1990 levels by 2030 at LAX and the other three LAWA airports, implement sustainability practices, and develop programs to reduce the generation of waste and pollutants. Actions are specified in the areas of aircraft operations, ground vehicles, electrical consumption, building, and other actions.

Executive Directive No. 10

As part of the City's efforts to reduce GHG emissions and promote long-term sustainability, in July 2007, Mayor Antonio Villaraigosa issued Executive Directive No. 10 regarding environmental stewardship practices. Consistent with the goal specified in Green LA to make the City of Los Angeles a worldwide leader in green buildings, Executive Directive No. 10 requires that City departments, including LAWA, create and adopt a "Statement of Sustainable Building Policies," which should encompass sustainable design, energy and atmosphere, materials, and resources, water efficiency, landscaping, and transportation resources. In addition, City departments and offices must create and adopt sustainability plans that include all the policies, procedures, programs, and policies that are designed to improve internal environmental efficiency. Finally, City departments are required to submit annual sustainability reports to the Mayor for review.[160] Climate LA, which was adopted subsequent to Executive Directive No. 10 also includes the goals supportive of green building and energy efficiency through building design and retrofits.

Sustainable City Plan

In 2014, Mayor Eric Garcetti launched LA's first-ever Sustainable City Plan ("pLAn"). The pLAn is a comprehensive and actionable policy roadmap that prepares the City for an environmentally healthy, economically prosperous, and equitable future for all. Mayor Garcetti released the pLAn in April 2015 along with a corresponding Executive Directive (ED-#5) that incorporates the pLAn into city-wide management. The framework of pLAn includes 14

---

157 City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, May 2007.

158 City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, May 2007.

159 City of Los Angeles, Climate LA - Municipal Program Implementing the Green LA Climate Action Plan, 2008.

160 City of Los Angeles, Antonio R. Villaraigosa, Mayor, Executive Directive No. 10, Subject: Sustainable Practices in the City of Los Angeles, July 18, 2007.

chapters, each of which sets forth a vision of things to be accomplished in the next 20 years and highlighted near- and long-term outcomes. Relative to Environment, the pLAn focuses on local water, local solar, energy-efficient buildings, carbon and climate leadership, and waste and landfills. Through the pLAn Mayor Garcetti committed the City to becoming a national leader in carbon reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The Plan sets targets of reducing GHG emissions below 1990 levels by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.

City of Los Angeles Green Building Code (LAGBC)

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) by amending certain provisions of Article 9 to incorporate by reference portions of the 2013 CALGreen Code and also added other miscellaneous conservation-related measures to the LAGBC for residential and non-residential development. The requirements of the adopted LAGBC, as updated (2016), apply to new building construction, building renovations, and building additions within the City of Los Angeles. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise residential buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings.

The Los Angeles Green Building Code Tier 1 standards, which are applicable to all projects with a LADBS permit-valuation over $200,000, require the proposed project to implement a number of measures that would reduce criteria pollutant and GHG emissions. These include measures similar to: reduce vehicle and equipment idling times; comply with Tier 4 emission standards for non-road diesel equipment; retrofit existing diesel equipment with particulate filters and oxidation catalysts; replace aging equipment with new low-emission models; and consider the use of alternative fuels for construction equipment.

LAWA Sustainability Plan

LAWA's Sustainability Plan,[161] developed in April 2008, describes LAWA's current sustainability practices and sets goals and actions that LAWA will undertake to implement the initiatives described above (Green LA, Climate LA, and LAGBC). The Sustainability Plan presents initiatives for the fiscal year 2008-2009 and long-term objectives and targets to meet the fundamental objectives identified above. Included in those targets is Target 5A – *Reduce GHG emissions levels to 35% below 1990 levels by 2030*.

LAWA Sustainable Airport Planning, Design and Construction Guidelines

In 2008, LAWA developed *Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects* (LAWA Guidelines), which were subsequently updated in 2009 and 2010.[162] The LAWA Guidelines were developed to provide a comprehensive set of performance standards focusing on sustainability specifically for Airport projects on a project-level basis. A portion of the LAWA Guidelines is based on the LEED® rating systems for buildings. The LAWA Guidelines incorporate a "LAWA-Sustainable Rating System" based on the number of planning and design points and construction points a project achieves, based on the criteria and performance standards defined in the LAWA Guidelines, which is similar to LEED®.

Based on the above, LAWA implemented numerous steps to increase its sustainability practices related to daily Airport operations, many of which directly or indirectly contributed to a reduction in GHG emissions. Actions that LAWA undertook included promoting and expanding non-stop shuttle services to the Airport in an effort to reduce the number of vehicle trips to the Airport, establishment of an employee Rideshare Program, use of alternative fuel vehicles, purchasing renewably generated Green Power from LADWP, and reducing electricity consumption by installing energy-efficient lighting, variable demand motors on terminal escalators, and variable frequency drives on fan units at terminals and LAWA buildings.[163]

LAWA also utilizes the LAGBC, described above, in integrating sustainability features into new development and redevelopment projects at LAX. All building projects in the City of Los Angeles are subject to the LAGBC, which is

161 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Plan, April 2008.

162 City of Los Angeles, Los Angeles World Airports, Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, Version 5.0, February 2010.

163 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed September 6, 2016.

based on CALGreen with some modifications unique to the City of Los Angeles. The LAGBC is a code-requirement that is part of Title 24, and is enforced by the Los Angeles Department of Building & Safety (LADBS). Given that the LAGBC has replaced LEED® in the Los Angeles Municipal Code, LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier-1 conformance, to be certified by LADBS inspector during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Tier-1 refers to specific practices that are to be incorporated into projects to "achieving enhanced construction levels by incorporating additional green building measures." Should a project pose unique issues/circumstances based on the scope and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

LAWA Commitment to Carbon Management Goals

In August 2016, LAWA adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources below 1990 levels 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.[164] Additionally, LAWA has successfully completed the Airport Carbon Accreditation (ACA) program through the Airport Council International (ACI) to achieve certification at "Level 2 Reduction."[165] Airports are certified under ACA at four progressively stringent levels of participation with recognition of improvements at each stage. The first stage, Level 1 *Mapping*, requires airports to produce a Scopes 1 and 2 "carbon footprint" for the airport, along with evidence of a publicly available environmental/carbon policy endorsed at the highest level of airport management. Independent verification of an airport's carbon footprint is required on entry into the program, and then again every two years on renewal at the same level, or upon each upgrade. The ACA program notes that the carbon footprint serves as the basis for developing carbon management and engagement plans (Level 2 *Reduction* and Level 3 *Optimization*). Through the plans, ACA expects that an airport then commits to reduce its annual carbon footprint at these levels. An airport may then also seek to achieve carbon neutrality for the carbon dioxide (CO_2) emissions under its direct control (Scope 1 and 2) by offsetting its residual emissions which it cannot reduce by other means (Level 3+ *Neutrality*).

It is important to note that LAWA's internal commitment to the GHG emissions reduction goals identified above, as reflected in the ACI certification that LAWA has achieved for Level 2 Reduction, takes into account a wide array of existing and anticipated GHG reduction programs and improvements, which will continue to the implemented and may be refined, adjusted, and added to by LAWA in the course of achieving the goals set for 2025, 2035, and 2050. Examples of such GHG reduction programs and improvements for LAWA owned and operated sources that are specifically mentioned in the application for the ACI certification include, but are not limited to, the following:

- LAWA's Clean Fleet Program. LAWA introduced alternative fuel technology to its fleet in 1993. LAWA currently operates the nation's largest alternative-fuel airport fleet consisting primarily of CNG, LNG, propane, full-electric, and hybrid-electric vehicles. In the coming years, LAWA intends to replace its standard gasoline engine vehicles and retired CNG vehicles with electric vehicles. LAWA is also embarking on a campus-wide EV infrastructure study to support greater deployment of EV vehicles.
- Solar Feasibility Study. In 2015, LAWA launched a solar feasibility study for LAX to identify locations for the installation of photovoltaic solar energy at LAX to replace or supplement the use of purchased electricity. LAWA estimates that for every megawatt of solar installed at LAX, over 800 metric ton of CO_2 can be saved.
- Green Power Purchase. LAWA has been purchasing green power from LA DWP for several years. More specifically, LAWA purchased 19.1 million kWh of green power in 2015, 20.9 million kWh in 2014, and 28 million kWh in 2013.[166] In 2015 and for several prior years, LAWA has made the "EPA and Green Partnership, Top 30 Local Government" list.

---

164 Memorandum from Deborah Flint, Chief Executive Officer, Los Angeles World Airports, LAWA's Commitment to Carbon Management Goals, August 31, 2016.

165 Los Angeles World Airports, News Release, September 27, 2016. Available at: https://www.lawa.org/newsContent.aspx?ID=2236, accessed on January 20, 2017.

166 LAWA also purchased green power in 2016; however, the year-end total has not yet been tabulated.

- Lighting Retrofit Projects. LAWA continues to replace lights and fixtures that serve terminals, streets, parking lots, and the airfield at LAX with a mix of energy efficient equipment. This project will continue for several years.
- Energy Efficiency Projects. LAWA continues to upgrade air-handling equipment and perform regular maintenance to improve energy efficiency of air handling units. LAWA replaces old computers and related equipment with Energy Star certified office equipment.
- The Utility Monitoring Infrastructure Project (UMIP). LAWA is in the midst of a program to add sub-meters for utilities across the LAX campus. One of the goals of the project is to allow LAWA to monitor energy usage at each of its facilities at the building level. Currently, LAWA can able to monitor electricity and natural gas consumption via the utility providers' invoices and meters, but these meters do not always correspond to a single structure.
- LAWA recently replaced the Central Utility Plant (CUP) at LAX. The new CUP is a state-of-the-art computerized facility that provides heating and cooling for the Central Terminal Area at LAX, and includes a co-generation system that simultaneously generates electrical power and steam. This process is anticipated to reduce fuel usage by at least 30 percent compared to separate electricity and heating processes. LAWA and LADWP estimated that the plant saved approximately 4,458,729 kWh in 2015, with an associated reduction in GHG emissions.

In addition to the above, the continued implementation of LAWA's sustainability programs, including the LAWA Sustainability Plan and the LAWA Sustainable Airport Planning, Design and Construction Guidelines, as well as LAWA's requirement that all building projects with an LADBS permit-valuation over $200,000 shall achieve Los Angeles Green Building Code Tier-1 conformance, will support LAWA's ability to achieve its carbon management goals.

In summary, LAWA's internal commitment to reduce GHG emissions from LAWA owned and operated sources will be implemented through a variety of programs and improvements to be implemented through 2025, 2035, and 2050 including, but not limited to, those described above. The GHG reduction goals reflected in that commitment are not intended or designed to be applied on an individual project-by-project basis.

4.2.3.2 Existing Greenhouse Gas Setting

According to the IPCC in 2007, worldwide man-made emissions of GHGs were approximately 40,000 million metric tons of CO_2e ($MMTCO_2e$), including ongoing emissions from industrial and agricultural sources, but excluding emissions from land use changes (i.e., deforestation, biomass decay). Total U.S. GHG emissions in 2013 were 6,673 $MMTCO_2e$, or about 15 percent of worldwide GHG emissions.[167]

California, due in part to its large size and large population, is a substantial contributor of global GHGs, and is the second largest contributor to GHG emissions in the United States (Texas is number one). As mandated by the Global Warming Solutions Act of 2006 (AB 32), CARB is required to compile GHG inventories for the State of California, including establishment of the 1990 Greenhouse Gas Emissions Level. Inventories have been prepared for 2000 through 2014. Based on the 2014 GHG inventory data (i.e., the latest year for which data are available), California emitted 441.5 $MMTCO_2e$ *including* emissions resulting from imported electrical power and approximately 405 $MMTCO_2e$ *excluding* emissions related to imported power.[168] **Table 4.2-2** identifies and quantifies statewide anthropogenic GHG emissions and sinks in 1990 and 2014. By contrast, California had the fourth lowest CO_2 emissions per capita from fossil fuel combustion in the U.S., due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.[169]

---

167 U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013, April 15, 2015, Available: www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf, accessed November 30, 2015.

168 California Air Resources Board, California Greenhouse Gas Inventory for 2000-2014 - by Category as Defined in the 2008 Scoping Plan, March 30, 2016, Available: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf, accessed September 2, 2016.

169 U.S. Energy Information Administration, Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2013, October 2015.

Table 4.2-2
State of California GHG Emissions[1/]

Category	Total 1990 Emissions ($Mmtco_2e$)	Percent of Total 1990 Emissions	Total 2014 Emissions ($Mmtco_2e$)	Percent of Total 2014 Emissions
Transportation	150.7	35%	159.5	36%
Electric Power	110.6	26%	88.2	20%
Commercial	14.4	3%	14.6	3%
Residential	29.7	7%	23.7	5%
Industrial	103.0	24%	93.3	21%
Recycling and Waste	--[2/]	--[2/]	8.9	2%
High GWP/Non-Specified [3/]	1.3	<1%	17.1	4%
Agriculture	23.4	5%	36.1	8%
Forestry	0.2	<1%	--[4/]	--[4/]
Forestry Sinks	-6.7	--	--[4/]	--[4/]
Net Total	**426.6**	**100%**	**441.5**	**100%**

Notes:
1/ Numbers may not add up exactly due to rounding.
2/ Included in other categories for the 1990 emissions inventory.
3/ High GWP gases are not specifically called out in the 1990 emissions inventory.
4/ Revised methodology under development (not reported for 2014).
Sources: California Air Resources Board, Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, November 16, 2007, Available: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf, accessed November 2015; California Air Resources Board, California Greenhouse Gas Inventory for 2000-2014 – by Category as Defined in the 2008 Scoping Plan, March 30, 2016, Available: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf, accessed August 2, 2016.
Prepared By: CDM Smith, August 2016.

Between 1990 and 2010, the population of California grew by approximately 7.5 million (29.8 to 37.3 million).[170] This represents an increase of approximately 25 percent from 1990 population levels. In addition, the California economy, measure as gross state product, grew from $773 billion in 1990 to 1.97 trillion in 2010 representing an increase of approximately 154 percent (over twice the 1990 gross state product).[171] Despite the population and economic growth, California's net GHG emissions only grew by approximately 6 percent. The California Energy Commission attributes the slow rate of growth to the success of California's renewable energy programs and its commitment to clean air and clean energy.[172]

The baseline operational emissions (2016) associated with the energy demands of the existing T2/T3 facilities are shown in **Table 4.2-3**.

170 California Department of Finance, Demographic Research Unit, Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2015 with 2010 Benchmark, May 1, 2015.
171 California Department of Finance, Gross Domestic Product, California, Available: http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/, accessed September 11, 2016. Estimated gross state product for 1990 and 2010 are based on current dollars as of June 2016.
172 California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, December 2006.

Table 4.2-3
2016 Baseline Energy-Related Operational GHG Emissions for Terminals 2 and 3

	Annual Emissions (Metric Tons CO_2e [1/] per Year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**Total (CO_2e) [2/]**
Area [2/]	<1	<1	<1	<1
Energy	6,286	<1	<1	6,301
Total [3/]	6,286	<1	<1	6,301

Notes:
CO_2e = carbon dioxide equivalent
CO_2 = carbon dioxide
CH_4 = methane
N_2O = nitrous oxide
1/ CO_2e emissions are determined by multiplying the individual pollutant emissions by its respective GWP. The GWP for CH_4 is 25 and the GWP for N_2O is 298.
2/ Area emissions are generated by operations associated with maintenance of the facility.
3/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR.
Prepared By: CDM Smith, August 2016.

4.2.4 Thresholds of Significance

For the purposes of the LAX T2/T3 Modernization Project (proposed project) EIR analysis, and in accordance with Appendix G of the State CEQA Guidelines, environmental impacts related to GHG emissions are considered significant if the proposed project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

4.2.4.1 Quantitative Threshold

Section 15064.7 of the State CEQA Guidelines defines a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, compliance with which determines the level of impact significance. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance thresholds to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. However, neither SCAQMD nor the City of Los Angeles have yet established project-level specific quantitative significance thresholds for GHG emissions. State CEQA Guidelines Section 15183.5 encourages lead agencies to make use of programmatic mitigation plans and programs from which to tier when they perform any individual project analyses. However, the City of Los Angeles has not developed a Greenhouse Gas Reduction Plan meeting the requirements set forth in State CEQA Guidelines Section 15183.5.

On December 5, 2008, the SCAQMD Governing Board adopted its staff proposal for an interim CEQA GHG Significance threshold for projects where the SCAQMD is the lead agency. [173] For industrial projects where SCAQMD is the lead agency, the SCAQMD's adopted threshold is 10,000 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/yr). Selection of 10,000 $MTCO_2e$/yr as a mass emissions threshold of significance for industrial projects was based largely on the GHG emission associated with the natural gas consumption characteristics of numerous facilities evaluated by the SCAQMD. Selection of that threshold for industrial projects also took into

[173] South Coast Air Quality Management District, Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #8, Diamond Bar, January 28, 2009, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-8/ghg-meeting-8-minutes.pdf?sfvrsn=2, Accessed January 19, 2017.

consideration that industrial facilities typically containing stationary source equipment are largely permitted or regulated by the SCAQMD, consequently providing some ability to directly address GHG emissions. At this time, this adopted threshold applies to only industrial projects where the SCAQMD is the lead agency. While SCAQMD is not the lead agency for the proposed T2/T3 Modernization Project, the main source of GHG emissions associated with the proposed project is considered to be comparable to that of a stationary industrial source, as was the primary source of interest in the SCAQMD's establishment of that GHG threshold. Specifically, the main source of GHG emissions for the proposed project is the increased energy demand associated with the additional building area developed for the project, and the energy provided to meet that increased demand would be primarily from a power plant(s) (i.e., stationary industrial source of GHG emissions). As a result, for the purposes of this analysis, the adopted 10,000 $MTCO_2e$/yr threshold was used.

4.2.4.2 Plan Consistency Threshold

This EIR also uses a second "plan consistency" impact significance threshold. The proposed project's GHG emission would be significant if they conflict with an applicable state regional, or local plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

4.2.5 Impacts Analysis

4.2.5.1 Project GHG Emissions

4.2.5.1.1 Construction Emissions

Annual GHG emissions for construction of the proposed project are presented in **Table 4.2-4**, which, as indicated in the table, would total 23,659 $MTCO_2e$. As noted in Section 4.2.2.1, construction emissions were amortized over the lifetime of the proposed project, which is assumed to be 30 years. The total CO_2e amortized over the life of the proposed project construction is equal to 789 $MTCO_2e$ per year. See Appendix B.1.1 for detailed calculations.

Table 4.2-4
Construction Greenhouse Gas Emissions for the Proposed Project (MTY)

Emission Source	2017	2018	2019	2020	2021	2022	2023
Off-Road, On-Site Equipment	443	1,371	875	692	2,091	1,345	1,089
On-Road, On-Site Trucks	63	281	438	932	1,220	2,148	2,066
On-Road, Off-Site Workers	128	497	848	1,278	658	1,071	771
On-Road, Off-Site Deliveries	18	54	44	123	184	190	175
On-Site Hauling Staging	0	46	13	49	101	89	80
On-Site Hauling Batching	36	38	0	292	596	566	567
Parking, On-Site	2	9	15	23	12	19	13
All Sources (Metric Tons):	**690**	**2,296**	**2,233**	**3,389**	**4,861**	**5,428**	**4,762**

Source: Appendix B.1.1 of this EIR
Prepared By: CDM Smith, August 2016.

4.2.5.1.2 Operational Emissions

A comparison of emissions from the 2023 proposed project to the 2016 existing conditions is shown in **Table 4.2-5**. As shown, the incremental emissions between the 2016 existing conditions and the implementation of the 2023 proposed project scenario are a net increase in CO_2e. With the addition of the amortized construction emissions, the proposed project's total annual emissions increase of 4,551 $MTCO_2e$/yr remain well below the 10,000 $MTCO_2e$/yr threshold. Therefore, using this threshold, GHG emissions resulting from the construction and operations of the proposed project would not result in a significant impact on climate change over the 2016 existing conditions.

Table 4.2-5
Amortized Construction and Operational Greenhouse Gas Emissions for the Proposed Project as Compared with the 2016 Baseline (MTY)

Emissions Source	2016 Baseline	2023 Proposed project	Incremental Difference
Area [1/]	<1	<1	0
Energy	6,301	10,852	4,551
Total Operational [2/]	6,301	10,852	4,551
Amortized Construction	-	789	789
Total Net [2/]	**6,301**	**11,641**	**5,341**

Notes:
CO_2e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR.
Prepared By: CDM Smith, August 2016.

4.2.5.1.3 Detailed Analysis

The operational emissions detailed above were calculated using CalEEMod2016.3.1 default values for the proposed project; however, the model has several features that result in an overly conservative analysis. First, CalEEMod2016.3.1 uses the 2013 update to Title 24 rather than the most recent revision in 2016 for the purposes of operational energy calculations. Additionally, the above analysis assumes that the existing terminal area was constructed in such a way to comply with all current emissions standards including the 2013 revision to Title 24. The existing terminal, rebuilt for the 1984 Olympics in Los Angeles, likely does not meet Title 24 requirements leading to an overly conservative (low) baseline. Thus, a revised analysis was conducted. The baseline was recalculated to represent the terminals operating without Title 24 emissions reductions. Additionally, CalEEMod is limited in its use of default 2010 electrical generation GHG emission factors, as a result the proposed project was modified such that the LADWP reductions in CO2 emissions due to increased renewable portfolio and divestment of coal power, as well as 2016 Title 24 revisions, were accounted for. This analysis is provided for disclosure purposes in **Table 4.2-6**.

Table 4.2-6
Amortized Construction and Revised Operational Greenhouse Gas Emissions for Proposed Project as Compared with Revised 2016 Baseline (MTY)

Emissions Source	2016 Baseline	2023 Proposed project	Incremental Difference
Area [1/]	<1	<1	0
Energy	7,709	8,011	302
Total Operational [2/]	7,709	8,011	302
Amortized Construction	-	789	789
Total Net [2/]	**7,709**	**8,800**	**1,091**

CO_2e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR. Prepared By: CDM Smith, August 2016.

It should be noted that from an energy efficiency standpoint, implementation of the proposed project would result in a much more energy efficient building, on a per-square-foot basis, than what currently exists at the project site; which, in turn, results in much lower GHG emissions on a per-square-foot basis. Based on the existing total building area of 788,031 square feet with the 2016 Baseline GHG emissions of 7,709 MTY indicated above in **Table 4.2-6**, the per-square-foot GHG emissions are approximately 19.6 pounds per year. By comparison, the proposed project's total building area of 1,620,010 square feet with the 2023 Proposed Project GHG emissions of 8,011 MTY indicated above in **Table 4.2-6**, the per-square-foot GHG emissions would be are approximately 9.9 pounds per year.

4.2.5.2 Consistency with Greenhouse Gas Reduction Plans

4.2.5.2.1 Local

Implementation of the proposed project would not conflict with local plans, policies, and regulations adopted for the purposed of reducing GHG emissions, including Green LA, Climate LA, and LAWA's Sustainability Plan, Sustainable Airport Planning, Design and Construction Guidelines and commitment to carbon management goals.

Green LA includes the goal for LA's airports to "green the airports" including the need for: sustainability programs; LEED® green building rating standards in future construction; improvements in recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and, evaluating evaluate options to reduce aircraft-related GHG emissions. Implementation of the proposed project will comply with LAWA's sustainability requirements and would be designed and constructed to meet LAGBC Tier-1 requirements as well as incorporating LEED® Silver level of sustainability measures, which will serve to increase energy efficiency in new construction, increase the application of recycling and conservation, and reduce GHG emissions, in conjunction with LAWA's overall program for recycling, conservation, and GHG reductions.

The Climate LA, which identifies goals to reduce CO_2 emissions 35 percent below 1990 levels by 2030 at LAX and the other three LAWA airports, implement sustainability practices, and develop programs to reduce the generation of waste and pollutants. Actions are specified in the areas of aircraft operations, ground vehicles, electrical consumption, building construction, and other actions such as related to sustainability programs and the use of recycled water for landscape and other areas. Implementation of the proposed project will not affect aircraft operations or ground vehicles. The energy efficiency of the new building areas that would occur under the proposed project would be substantially better than that of the existing building area on a per square foot basis – see Section 4.2.5.1.3 above. Building construction would feature the use of low-VOC adhesives, sealants, paints and coatings, which is recognized as a GHG reduction action on the Climate LA plan, and LAWA's requirements for the use of low emission construction equipment (i.e., Tier 4 engines) also serve to reduce GHG emissions. Implementation of the proposed project would comply with LAWA's sustainability requirements. The proposed project involves very little landscaped areas (i.e., ornamental landscaping within terminal) and the use of recycled water is infeasible given that there are currently no recycled water lines within or near the CTA. As indicated above and further described below, LAWA has adopted an internal commitment to reduce GHG emissions from LAWA owned and operated sources below 1990 levels 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, which surpasses the GHG reduction goal set forth for LAX in Climate LA.

Executive Directive No. 10 requires City departments to create and adopt a statement of sustainable building policies. LAWA has sustainability program, with which implementation of the proposed project will comply.

The Sustainable City Plan (pLAn) framework relate to Environment focuses on local water, local solar, energy-efficient buildings, carbon and climate leadership, and waste and landfills. Implementation of the proposed project will include sustainability measures that serve to reduce water demands. The proposed project does not include solar; however, as indicated in Section 4.2.3.1.4, LAWA has initiated a solar feasibility study for LAX to identify locations for the installation of photovoltaic solar energy at LAX. The emphasis of pLAn relative to carbon and climate leadership is to eliminate coal power as a source of electricity for the City and invest in green energy. While the proposed project has no control over that aspect of the plan, LAWA has been purchasing, and plans to continue to purchase, green energy for LAX, as noted above in Section 4.2.3.1.4.

Implementation of the proposed project will comply with the applicable requirements of the Los Angeles Green Building Code.

Implementation of the proposed project will comply with LAWA's sustainability requirements.

With regard to LAWA's commitment to carbon management goals, implementation of the proposed project will comply with the applicable programs and initiatives, such as sustainability requirements, meeting LAGBC requirements, incorporation of LEED® standards into building design, construction, and operation, construction

equipment requirements, that are among the many ways that, collectively, will enable LAWA to meet the goals for GHG reductions.

Based on the above analysis, the proposed project would not conflict with local plans, policies, and regulations adopted for the purposed of reducing GHG emissions.

4.2.5.2.2 State and Regional

State and regional plans, policies, and regulations are generally aimed at setting statewide and regional policy, and are not directed at individual projects. Additionally, neither the AB 32 Scoping Plan, Executive Order B-30-15, SB 32, Executive Order S-3-05, nor SCAG's 2016-2040 RTP/SCS provide a specific basis for calculating what the proposed project's hypothetical "fair share" of statewide or regional emissions reductions might be. See *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 205, 225-226.) It should also be noted that the Executive Orders referenced, including the GHG reduction trajectories, directly apply to State agencies and not to local agencies or the private sector. Similarly, the AB 32 Scoping Plan and SB 32, including the draft Scoping Plan for SB 32, are directed toward statewide programs, as identified through the California Air Resources Board, and do not directly limit GHG emissions from individual development projects. Statewide programs and initiatives directly implementing GHG reductions called for in AB 32 and SB 32 include, but are not limited to, the Renewable Portfolio Standard, the Low Carbon Fuel Standard, the Mobile Source Strategy, the Sustainable Freight Action Plan, the Short-Lived Climate Pollutant Reduction Strategy, SB 375 (which in Southern California is implemented by SCAG's RTP/SCS), the Cap-and-Trade Program, and proposed Integrated Natural and Working Lands Action Plan.

Notwithstanding the above, it should also be noted that the GHG emissions occurring from construction and operation of the proposed project would be less than the SCAQMD threshold of significance, which is intended to achieve the level of GHG reductions set forth in Executive Order S-3-05 which, in turn, would also achieve the GHG reduction goal of AB 32 (i.e., S-3-05 includes the GHG reduction goal to reduce statewide GHG emissions to 1990 levels by 2020, which is the same goal as in AB 32).[174] As a result, GHG emissions from the proposed project would not conflict with statewide and regional plans and policies such as Executive Order S-3-05, and Assembly Bill 32, whose purpose is to reduce statewide emissions to 1990 levels by 2020; Executive Order B-30-15 and SB 32, which call for a reduction in statewide GHG emissions to 40 percent below 1990 levels by 2030; or the SCAG 2016-2040 RTP/SCS, which outlines a vision for land use and transportation for the region that would achieve state GHG emissions reduction goals.

4.2.5.3 Summary of Impacts

Based on the information presented above in Sections 4.2.4.1 and 4.2.4.2, the GHG impacts associated with construction and operation of the proposed project are summarized as follows:

- Implementation of the proposed project compared to 2016 Baseline Conditions would result in an increase in GHG emissions but would not exceed the 10,000 $MTCO_2e$/yr as the threshold of significance and, therefore the GHG emissions impact using that threshold would be less than significant.
- Implementation of the proposed project would not conflict with state, regional and local plans, policies, or regulations adopted for the purpose of reducing GHG emissions, and therefore the GHG impact using that threshold is less than significant.

4.2.6 Cumulative Impacts

As discussed previously in Section 4.2.2, GHG impacts are exclusively cumulative impacts; hence, an evaluation of cumulative GHG impacts is already provided above and no further analysis is necessary.

[174] South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-2.

4.2.7 Mitigation Measures

As indicated in Section 4.2.5.1.1, GHG impacts associated with construction and operation of the proposed project would be less than significant; therefore, no mitigation measures are required.

4.2.8 Level of Significance after Mitigation

GHG impacts associated with construction and operation of the proposed project would be less than significant.

4.2.9 Other Measures

As indicated in 4.2.5.1, GHG impacts associated with construction and operation of the proposed project would be less than significant; therefore, no mitigation measures are required to reduce impacts. However, as discussed in Section 4.1.1.8 (of Section 4.1, *Air Quality and Human Health Risk*), Standard Control Measure (Mitigation Measure) LAX-AQ-1, Construction-Related Air Quality Control Measures, and Mitigation Measure MM-AQ (T2/T3)-1, Preferential Use of Renewable Diesel Fuel, would be applied to the proposed project to reduce construction-related air pollutant emissions. Although developed to address air quality impacts, these mitigation measures would also reduce GHG emissions associated with construction of the proposed project. The reduced GHG emissions are presented below for disclosure purposes.

4.2.9.1 Reduced GHG with Implementation of Air Quality Measures

Annual GHG emissions for construction of the proposed project with implementation of LAX-AQ-1 and MM-AQ [T2/T3]-1 are presented in **Table 4.2-7**; these emissions would total would total 20,018 $MTCO_2e$ over the seven-year construction period. As noted in Section 4.2.2.1, construction emissions were amortized over the lifetime of the proposed project, which is assumed to be 30 years. The total CO_2e amortized over the life of the proposed project improvements is equal to 667 $MTCO_2e$ per year.

Table 4.2-7
Construction Greenhouse Gas Emissions for the Proposed Project with Implementation of Air Quality Measures (MTY)

Emission Source	2017	2018	2019	2020	2021	2022	2023
Off-Road, On-Site Equipment	283	878	560	443	1,338	861	697
On-Road, On-Site Trucks	46	210	374	796	1,032	1,979	1,916
On-Road, Off-Site Workers	128	497	848	1,278	658	1,071	771
On-Road, Off-Site Deliveries	18	54	44	123	184	190	175
On-Site Hauling Staging	0	46	13	49	101	89	80
On-Site Hauling Batching	36	38	0	292	596	566	567
Parking, On-Site	2	9	15	23	12	19	13
All Sources (Metric Tons):	**514**	**1,732**	**1,854**	**3,003**	**3,920**	**4,775**	**4,220**

Source: Appendix B.1.1 of this EIR
Prepared By: CDM Smith, August 2016.

A comparison of the combined construction-related and operations-related emissions from the 2023 proposed project (assuming the conservative/worst-case operations energy demand scenario presented in **Table 4.2-5**, with implementation of the air quality measures noted above, to the 2016 existing conditions is shown in **Table 4.2-8**. As shown, the incremental emissions between the 2016 existing conditions and the implementation of the 2023 proposed project scenario are a net increase in CO_2e, but the increase is less than the 10,000 $MTCO_2e$/yr threshold and is approximately three percent lower than the combined construction and operation emissions of the project without implementation of the air quality measures (see **Table 4.2-5**).

Table 4.2-8
Amortized Construction and Operational Greenhouse Gas Emissions for Proposed Project with Implementation of Air Quality Measures as Compared with 2016 Baseline (MTY)

Emissions Source	2016 Baseline	2023 Proposed Project	Incremental Difference
Area [1/]	<1	<1	0
Energy	6,301	10,852	4,551
Total Operational [2/]	6,301	10,852	4,551
Amortized Construction	-	667	667
Total Net [2/]	**6,301**	**11,519**	**5,218**

Notes:
CO_2e = carbon dioxide equivalent
1/ Area emissions are generated by operations associated with maintenance of the facility.
2/ Totals may not add exactly because of rounding.
Source: Appendix B.2.1 of this EIR.
Prepared By: CDM Smith, August 2016.

In addition, for operational impacts, the proposed project would comply with the requirements of the City of Los Angeles Green Building Ordinance and with LAWA policies and programs related to sustainability and reducing GHG emissions that are implemented on a project-specific and on an Airport-wide basis. LAWA has an ongoing commitment to increasing energy efficiency and implementing energy conservation measures to reduce wasteful, inefficient, and unnecessary consumption of energy at its airports, which will serve to reduce GHG emissions.

4.3 Cultural Resources

4.3.1 Introduction

This cultural resources section addresses proposed project impacts on archaeological resources, paleontological resources, Tribal cultural resources, and disturbance of human remains (hereafter referred to as 'cultural resources').

Prior to the preparation of this EIR, an Initial Study (included in Appendix A of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential environmental impacts associated with cultural resources. For one of these screening thresholds, the Initial Study found that the proposed project would result in "less than significant impacts," and thus, no further analysis of this topic in an EIR was required. The following Initial Study screening criterion related to cultural resources does not require any additional analysis in this EIR:

- Potential impacts related to a substantial adverse change in the significance of a historical structure that are defined in the State CEQA Guidelines Section 15064.5 as historical resources were evaluated and determined to have a "Less than Significant Impact" in the Initial Study. As discussed therein, evaluation of potential historical structures[175] within and adjacent to the proposed project site was conducted by Historic Resources Group (HRG) in June 2016.176 As described in Section V.a. of the Initial Study for the proposed project (included in Appendix A of this Draft EIR), T2 was originally constructed in 1961 but was demolished and completely reconstructed in place in 1988. T2 is not eligible for listing as a historic resource and is not considered a historical resource as defined in State CEQA Guidelines Section 15064.5. T3 was constructed in 1961 and is the only terminal on the north side of the CTA that includes one of the airport's original early-1960s oval-shaped satellite terminals. Terminal 3 has been substantially altered since 1961. Very little remains of the original T3 ticketing/baggage building with the exception of remnant ceramic tile cladding in some locations. T3 has also retained its original underground tunnel with mosaic tile murals177 connecting the original (1961) ticketing/baggage building to the oval shaped satellite building. The T3 satellite, built in 1961, remains largely intact but its southern façade has been altered by the addition of an aboveground concourse pier connecting the ticketing/baggage claim buildings to the satellite. Alteration of the original ticketing/baggage building and the addition of the connecting concourse in the 1980s have substantially changed the original 1961 configuration of T3 such that its original form is only partially apparent. T3 no longer retains sufficient integrity to be eligible for listing as a historic resource and is not considered a historical resource as defined in the State CEQA Guidelines Section 15064.5.

  Three identified historical structures that are considered historical resources as defined in the State CEQA Guidelines Section 15064.5 are located in the vicinity of the proposed project site: 1) Theme Building (eligible for National Register, listed in California Register, and a designated Los Angeles Historic Cultural Monument (HCM)), located in the center of the CTA, approximately 550 feet southeast of the proposed project site, opposite World Way; 2) 1961 Air Traffic Control Tower (eligible for local listing as a City of Los Angeles HCM), located at the eastern entrance of the CTA, approximately 1,200 feet southeast of the proposed project site; and 3) Terminal 6 Sign Tower (eligible for local listing as a City of Los Angeles HCM), located approximately 1,020 feet southeast of the proposed project site. As described in Section V.a. of the Initial Study, construction and operation of the proposed project

---

175 Listed or eligible for listing in the National Register of Historic Places or California Register of Historical Resources; included in a local register of historic resources.

176 Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016; included in Appendix A of this Draft EIR.

177 Construction and operation of the proposed project would not result in the demolition of the underground tunnel associated with the T3 concourse; the ceramic mosaic tile mural would not be demolished or altered by the proposed project.

would not have the potential to cause a substantial adverse change in the significance of any of these three historical structures.

The existing cultural resources in the project area are described below, along with the methodology and the regulatory framework that guided the evaluation of the cultural resources. Impacts to cultural resources that would result from the proposed project are identified, along with any measures to mitigate significant effects of the proposed project if needed.

4.3.2 Methodology

4.3.2.1 Overview

Record searches performed for previous and current projects associated with the Los Angeles International Airport (LAX)[178,179] were reviewed to determine if previously recorded archaeological sites and paleontological occurrences have been found within LAX or in the surrounding vicinity that require evaluation and treatment. The results provide a basis for assessing the sensitivity of the cultural resources study area for additional and buried archaeological and paleontological resources, as well as human remains.

In addition, a Sacred Lands File (SLF) records search for the project site was commissioned through the California Native American Heritage Commission (NAHC) to determine whether any Native American cultural resources in the NAHC database were located within the project site or within a half-mile radius. On September 14, 2016, the NAHC indicated that the SLF records search was completed with negative results. The NAHC provided a list of Native American groups and/or individuals that have been identified as having affiliation with the project area.[180]

4.3.3 Existing Conditions

4.3.3.1 Regulatory Setting

Cultural resources fall within the jurisdiction of several levels of government. Federal laws provide the framework for the identification and, in certain instances, protection of cultural resources. Additionally, state and local jurisdictions play active roles in the identification, documentation, and protection of such resources within their communities. The National Historic Preservation Act of 1966, as amended (NHPA; 54 United States Code 300101 et seq.); California Environmental Quality Act (CEQA); California Register of Historical Resources (Public Resources Code 5024.1); and the City of Los Angeles Cultural Heritage Ordinance (Los Angeles Administrative Code, Section 22.171 et seq.)[181] are the primary federal, state, and local laws governing and affecting preservation of cultural resources of national, state, regional, and local significance.

Cultural resources regulations include historic, archaeological and paleontological resources, as well as Tribal cultural resources. Impacts to historic structures were evaluated in the Notice of Preparation/Initial Study (Appendix A of this Draft EIR) and determined to be less than significant.

---

178 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.9.1 – Historic/Architectural and Archaeological/Cultural Resources, April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

179 Appendix C of this EIR: PCR Services Corporation, Archaeological and Paleontological Resources Assessment for the Proposed Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, California, January 23, 2015 (Appendix I of the LAX Landside Access Modernization Program Draft Environmental Impact Report, September 15, 2016.

180 Per an email received from NAHC on January 14, 2016, the Native American consultation list received from NAHC for the adjacent LAX Terminal 1.5 Project on November 24, 2015, was approved for use for the proposed project.

181 Los Angeles Administrative Code, Chapter 9, Division 22, Article 1, Section 22.171 et seq., Cultural Heritage Ordinance, Effective April 2, 2007, Available: http://preservation.lacity.org/sites/default/files/Cultural%20Heritage%20Ordinance.pdf.

Federal

National Register

The National Register of Historic Places (National Register) was established by the NHPA as "an authoritative guide to be used by Federal, State, and local governments, private groups and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment."[182] The National Register recognizes properties that are significant at the national, state, and/or local levels. To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. The National Register has established four Criteria for Evaluation to determine the significance of a resource:

1. It is associated with events that have made a significant contribution to the broad patterns of our history;
2. It is associated with the lives of persons significant in our past;
3. It embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. It yields, or may be likely to yield, information important in prehistory or history.[183]

Districts, sites, buildings, structures, and objects of potential significance that are at least 50 years in age must meet one or more of the above criteria. However, the National Register does not prohibit the consideration of properties less than 50 years in age whose exceptional contribution to the development of American history, architecture, archaeology, engineering, and culture can clearly be demonstrated. In addition to meeting the Criteria for Evaluation, a property must have integrity. "Integrity is the ability of a property to convey its significance."[184] According to National Register Bulletin 15, the National Register recognizes seven aspects or qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

To retain historic integrity, a property will always possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.[185]

In assessing a property's integrity, the National Register criteria recognizes that properties change over time; therefore, it is not necessary for a property to retain all of its historic physical features or characteristics. The property must retain, however, the essential physical features that enable it to convey its historic identity.[186]

---

182 36 Code of Federal Regulations, Section 60.2, Effects of Listing under Federal Law.

183 U.S. Department of Interior, National Park Service, National Register Bulletin 16*,* How to Complete the National Register Registration Form, revised 1997, Available: https://www.nps.gov/Nr/publications/bulletins/pdfs/nrb16a.pdf. This bulletin contains technical information on comprehensive planning, survey of cultural resources, and registration in the National Register.

184 U.S. Department of Interior, National Park Service, National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation, 1995, p. 44, Available: https://www.nps.gov/NR/PUBLICATIONS/bulletins/pdfs/nrb15.pdf, Accessed January 19, 2017.

185 U.S. Department of Interior, National Park Service, National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation, 1995, p. 44, Available: https://www.nps.gov/NR/PUBLICATIONS/bulletins/pdfs/nrb15.pdf, Accessed January 19, 2017.

186 "A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character. Because feeling and association depend on individual perceptions, their retention alone is never sufficient to support eligibility of a property for the National Register." U.S. Department of Interior, National Park Service, National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation, 1995, p. 46, Available: https://www.nps.gov/NR/PUBLICATIONS/bulletins/pdfs/nrb15.pdf, Accessed January 19, 2017.

NHPA Section 106 Consultation

Section 106 of the NHPA requires federal agencies to take into account the effects of their "undertakings" on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The historic preservation review process mandated by Section 106 is implemented in ACHP regulations (36 Code of Federal Regulations [CFR] Part 800). The Federal Aviation Administration (FAA) would be required to undertake Section 106 consultation before issuing federal approvals for the proposed project.

Under Section 106 consultation, the federal agency first determines whether a proposed project is an undertaking that could affect historic properties. An undertaking is defined in Section 106 as a "project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval." (36 CFR Section 800.16(y).) Historic properties are properties that are included in the National Register of Historic Places or that meet the criteria for the National Register. (36 CFR Section 800.16(l)(1).) If the agency's undertaking could affect historic properties, the agency determines the scope of appropriate identification efforts and then proceeds to identify historic properties in the area of potential effect (APE). The agency reviews background information, consults with the State Historic Preservation Officer (SHPO), and conducts additional studies as necessary. Section 106 review gives equal consideration to listed properties and unlisted properties meeting National Register criteria.

If the federal agency finds that historic properties are present, it proceeds to assess possible adverse effects. The agency, in consultation with the SHPO, makes an assessment of adverse effects on the identified historic properties. Adverse effects occur when an undertaking may directly or indirectly alter characteristics of a historic property that qualify it for inclusion in the National Register. Examples of adverse effects include physical destruction or damage; alteration not consistent with the Secretary of the Interior's Standards; relocation of a property; change of use or physical features of a property's setting; and visual, atmospheric, or audible intrusions. If a property is restored, rehabilitated, repaired, maintained, stabilized, remediated or otherwise changed in accordance with the Secretary of the Interior 's Standards (see below description), then it will not be considered an adverse effect.

If the federal agency and SHPO agree that there will be no adverse effect, the agency proceeds with the undertaking and any agreed-upon conditions. If they find that there would be an adverse effect, the federal agency begins consultation to seek ways to avoid, minimize, or mitigate the adverse effects. The federal agency then consults with the SHPO and other parties. The ACHP may participate in consultation in some circumstances. Consultation usually results in a Memorandum of Agreement, which outlines agreed-upon measures that the agency will take to avoid, minimize, or mitigate the adverse effects. In some cases, the consulting parties may agree that no such measures are possible, but that the adverse effects must be accepted in the public interest.

Secretary of the Interior's Standards

The Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards) are intended to promote responsible preservation practices that help protect irreplaceable cultural resources. They are neither technical nor prescriptive, and cannot be used to make essential decisions about which features of the historic building should be saved and which can be changed. However, once treatment is selected—preservation, rehabilitation, restoration, or reconstruction - the Standards provide treatment approaches and philosophical consistency to the work. Choosing the most appropriate treatment for a building requires careful decision making about a building's historical significance as well as taking into account a number of other considerations, including relative importance in history, physical condition, proposed use, and mandated code requirements.

Rehabilitation, the most common treatment, is the process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values. The Standards for Rehabilitation are as follows:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.[187]

Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation (DOT) Act, which is codified and renumbered as Section 303(c) of 49 United States Code, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance or land from an historic site of national, State, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.[188]

For Section 4(f) purposes, the term "use" not only includes actual physical takings of Section 4(f) lands but also adverse indirect impacts, or constructive use. Constructive use only occurs if Section 4(f) lands are substantially impaired by a Proposed Action or its alternatives, which includes substantially diminishing the activities, features, or attributes of the Section 4(f) resource that contribute to its significance or enjoyment.

---

[187] U.S. Department of Interior, National Park Service, Secretary of the Interior's Standards for Rehabilitation. Available: https://www.nps.gov/tps/standards/rehabilitation.htm, accessed September 4, 2016.

[188] U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy, Order 1050.1F, Desk Reference, July 2015, Available: http://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/desk-ref.pdf, Accessed January 19, 2017.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

Office of Historic Preservation

The OHP, as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also carries out the duties as set forth in the Public Resources Code and maintains the California Historic Resources Information System and the California Register. The SHPO is an appointed official who implements historic preservation programs within the state's jurisdiction. CEQA requires projects to identify, analyze, and provide feasible mitigation for substantial adverse impacts that may affect the significance of identified historical resources.

California Register

The California Register of Historical Resources (California Register) was created by Assembly Bill 2881, which was signed into law on September 27, 1992. The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[189] The criteria for eligibility for the California Register are based on National Register criteria.[190] Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.[191] Per OHP's Instructions for Recording Historical Resources, physical evidence of human activities more than 45 years old may be recorded for purposes of inclusion in OHP's filing system although, similar to the National Register, resources less than 45 years old may also be filed.[192]

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally Determined Eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- CPHI that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.193

Other resources that may be nominated to the California Register include:

- Individual historical resources;

189 California Public Resources Code, Section 5024.1(a).
190 California Public Resources Code, Section 5024.1(b).
191 California Public Resources Code, Section 5024.1(d).
192 California Office of Historic Preservation, Instructions for Recording Historical Resources, March 1995.
193 California Public Resources Code, Section 5024.1(d).

- Historical resources contributing to historic districts;
- Historical resources identified as significant in historical resources surveys with significance ratings of Categories 1 through 5; and
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.[194]

To be eligible for the California Register, a historical resource must be significant at the local, state, or national level, under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, a historical resource must retain enough of its historic character or appearance to be recognizable as a historical resource and to convey the reasons for its significance.[195] Historical resources that have been rehabilitated or restored may be evaluated for listing. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must also be judged with reference to the particular criteria under which it is proposed for eligibility. It is possible that a historical resource may not retain sufficient integrity to meet the criteria for listing in the National Register but may still be eligible for listing in the California Register.[196]

Under CEQA, a "project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."[197] This statutory standard involves a two-part inquiry. The first part is a determination of whether the project involves a historical resource. If it does, the inquiry addresses whether the project may cause a "substantial adverse change in the significance" of the resource. State CEQA Guidelines Section 15064.5 provides that for the purposes of CEQA compliance, the term "historical resources" shall include the following:[198]

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the California Register.
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat such resources as significant for purposes of CEQA unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence

194 California Public Resources Code, Section 5024.1(e).

195 14 California Code of Regulations, Chapter 11.5, Section 4852(c), Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources.

196 14 California Code of Regulations, Chapter 11.5, Section 4852(c), Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources.

197 California Public Resources Code, Section 21084.1.

198 14 California Code of Regulations, Section 15064.5(a), Determining the Significance of Impacts to Archaeological and Historical Resources.

in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets one of the criteria for listing on the California Register.

- The fact that a resource is not listed in or determined to be eligible for listing in the California Register, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1.

Under CEQA, generally a project that follows the Secretary of the Interior's standards shall be considered as mitigated to a level of less than a significant impact on the historical resource. CEQA Guidelines Sections 15064.5(b)(3), 15126.4(b)(1).

Assembly Bill 52

Assembly Bill 52 (AB 52), approved by Governor Brown on September 25, 2014, establishes a new category of resources in CEQA called "tribal cultural resources" that considers tribal cultural values in addition to scientific and archaeological values when determining impacts and mitigation. Further, AB 52 establishes a consultation process between California Native American tribal governments and lead agencies applicable to any project for which a Notice of Preparation, Notice of Intent to Adopt a Mitigated Negative Declaration, or Notice of Intent to Adopt a Negative Declaration is filed on or after July 1, 2015.

Section 1 of AB 52 states the legislature's intent as follows:

> "In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and respecting the interests and roles of project proponents, it is the intent of the Legislature, in enacting this act, to accomplish all of the following:
>
> (1) Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities.
>
> (2) Establish a new category of resources in the California Environmental Quality Act called "tribal cultural resources" that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation.
>
> (3) Establish examples of mitigation measures for tribal cultural resources that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible.
>
> (4) Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated. Because the California Environmental Quality Act calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources.
>
> (5) In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning tribal cultural resources, at the earliest possible point in the California Environmental Quality Act environmental review process, so that tribal cultural resources can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decisionmaking body of the lead agency.
>
> (6) Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to the California Environmental Quality Act (Division 13 (commencing with § 21000) of the Public Resources Code).

(7) Ensure that local and tribal governments, public agencies, and project proponents have information available, early in the California Environmental Quality Act environmental review process, for purposes of identifying and addressing potential adverse impacts to tribal cultural resources and to reduce the potential for delay and conflicts in the environmental review process.

(8) Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, tribal cultural resources.

(9) Establish that a substantial adverse change to a tribal cultural resource has a significant effect on the environment."[199]

Tribal cultural resources, as defined in Public Resources Code Section 21074, are either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is either:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c). In applying the criteria set forth in Public Resource Code Section 5024.1(c) for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

The specific steps and timelines governing the notice and consultation process under AB 52 are as follows:

"1) The Native American Heritage Commission will provide each tribe with a list of all public agencies that may be lead agencies under CEQA within the geographic area with which the tribe is traditionally and culturally affiliated, the contact information of those public agencies, and information on how the Tribe may request consultation. This list must be provided on or before July 1, 2016 (Public Resources Code Section 5097.94(m)).

2) If a tribe wishes to be notified of projects within its traditionally and culturally affiliated area, the tribe must submit a written request to the relevant lead agency (Public Resources Code Section 21080.3.1(b)).

3) Within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects as described in step 2, above. That notice must include a description of the project, its location, and must state that the tribe has 30 days to request consultation.

4) If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification described in step 3, above. The tribe's response must designate a lead contact person. If the tribe does not designate a lead contact person, or designates multiple people, the lead agency shall defer to the individual listed on the contact list maintained by the Native American Heritage Commission.

5) The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation.

6) Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a

[199] AB 52 (Chapter 532, Statutes of 2014).

significant effect, if a significant effect exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (Public Resources Code Section 21080.3.2(b)(1) & (2)). Note that consultation can also be ongoing throughout the CEQA process."[200]

California Health and Safety Code 7050.5

California Health and Safety Code Section 7050.5 requires that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC.

Public Resources Code Section 5097.98

Section 5097.98 of the California Public Resources Code stipulates that whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the NAHC. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Local

City of Los Angeles

Statutory provisions for the preservation of paleontological resources and mitigation of adverse environmental impacts on paleontological resources are found in Chapter II, Section 3 of the Conservation Element of the City of Los Angeles General Plan, which states that:

- Endangered paleontological sites shall be protected by an ordinance that provides for permits, procedures, and provisions for salvage excavations of sites to be adversely affected.
- Upon application for grading, building, demolition, or other construction permits, the Cultural Heritage Commission shall be notified of any known paleontological sites. If any such sites should be discovered during the course of work performed under permits, the Cultural Heritage Commission shall be promptly notified.
- The City shall attempt to avoid disturbance of paleontological deposits. In the event this is not feasible, the City shall notify organizations such as the Natural History Museum and local universities to allow sufficient time to study the site.

[200] State of California, Governor's Office of Planning and Research, Discussion Draft Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA, May 2015, Available: https://www.opr.ca.gov/docs/DRAFT_AB_52_Technical_Advisory.pdf https://www.opr.ca.gov/docs/DRAFT_AB_52_Technical_Advisory.pdf,

LAX Archaeological Treatment Plan

Los Angeles World Airports (LAWA) prepared an Archaeological Treatment Plan (ATP)[201,202] to ensure the long-term protection and proper treatment of archaeological discoveries of federal, state, and/or local significance that may be encountered during LAX Master Plan implementation. LAWA also requires compliance with the ATP for all non-LAX Master Plan development projects at LAX that involve grading and/or excavation in native and undisturbed soils. The ATP establishes requirements for monitoring during grading and/or excavation in native and undisturbed soils by a qualified archaeologist and protocols for the identification, evaluation, and recovery of archaeological resources, consistent with federal and state requirements, if such resources are discovered.

LAX Paleontological Management Treatment Plan

LAWA prepared a Paleontological Management Treatment Plan (PMTP)[203,204] to ensure the proper treatment of paleontological resources that may be encountered during LAX Master Plan implementation. The PMTP focuses on the identification, recovery, proper treatment, and long-term protection and archival conservation of expected and unexpected paleontological discoveries of federal, state, and/or local significance that may be encountered during LAX Master Plan implementation. LAWA also requires compliance with the PMTP for all non-LAX Master Plan development projects at LAX that involve excavation in native and undisturbed soils. In the event that paleontological deposits are encountered, the PMTP is used as a guideline for the evaluation, treatment and archival conservation of such resources consistent with federal and state requirements.

City of Los Angeles Conservation Element of the General Plan

The Conservation Element makes provisions, policies and objectives for the preservation and protection of paleontological, archaeological and historical sites. Chapter II, Section 3 of the City of Los Angeles General Plan Conservation Element (adopted 2001) contains the following objective and policy applicable to the proposed project:

> Objective: Protect the City's paleontological resources for historical, cultural, research, and/or educational purposes.
>
> Policy: continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.

City of Los Angeles Cultural Heritage Ordinance

The City of Los Angeles enacted a Cultural Heritage Ordinance in April 1962 (Los Angeles Administrative Code, Section 22.130) that defines LAHCMs for the City. According to the ordinance, LAHCMs are sites, buildings, or structures of particular historical or cultural significance to the City of Los Angeles in which the broad cultural, political, or social history of the nation, state, or City is reflected or exemplified, including sites and buildings associated with important personages or that embody certain distinguishing architectural characteristics and are associated with a notable architect. LAHCMs are regulated by the City's Cultural Heritage Commission and the City Council.

---

201 City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan: Mitigation Monitoring & Reporting Program - Archaeological Treatment Plan, prepared by Brian F. Smith and Associates. June 2005.

202 The ATP was prepared in accordance with the LAX Master Plan Mitigation Monitoring and Reporting Program but is applicable to all projects at the airport with the potential to affect archaeological resources.

203 City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan Mitigation Monitoring & Reporting Program: Paleontological Management Treatment Plan, prepared by Brian F. Smith and Associates, revised December 2005.

204 The PMTP was prepared in accordance with the LAX Master Plan Mitigation Monitoring and Reporting Program but is applicable to all projects at the airport with the potential to affect paleontological resources.

The City of Los Angeles Cultural Heritage Ordinance establishes criteria for designating local historical resources as LAHCMs. These properties must retain integrity and convey their significance under one or more of the following criteria:

1. Historic structures or sites in which the broad cultural, economic, or social history of the nation, state, or community is reflected and exemplified; identified with important events in the main currents of national, state, or local history.
2. Identified with personages in the main currents of national, state, or local history.
3. Embody the distinguishing characteristics of an architectural type specimen, inherently valuable for a study of a period style or method of construction or a notable work of a master builder, designer, or architect whose individual genius influenced his age.

City of Los Angeles Historic Preservation Overlay Zone

The City of Los Angeles enacted the Historic Preservation Overlay Zone (HPOZ) Ordinance in 1979, which is a planning tool that enables the designation of historic districts. An HPOZ is an area of the city that is designated as containing structures, landscaping, natural features, or sites having historic, architectural, cultural, or aesthetic significance. While most districts are primarily residential, many have a mix of single-family and multi-family housing, and some include commercial and industrial properties. Individual buildings in an HPOZ need not be of landmark quality on their own. It is the collection of a cohesive, unique, and intact collection of historic resources that qualifies a neighborhood for HPOZ status.

4.3.3.2 Existing Archaeological/Historic Setting

Paleoindian Period (ca. 13,000-11,000 Years Before Present [YBP])

Little is known of Paleoindian peoples in inland southern California, and the cultural history of this period follows that of North America in general. The earliest radiocarbon dates from the Paleoindian Period in North America come from the Arlington Springs Woman site on Santa Rosa Island. These human remains date to approximately 13,000 YBP.[205] Lifeways during the Paleoindian Period were characterized by highly mobile hunting and gathering. Prey included megafauna such as mammoth and technology included a distinctive flaked stone toolkit that has been identified across much of North America and into Central America. They likely used some plant foods, but the Paleoindian toolkit recovered archaeologically does not include many tools that can be identified as designed specifically for plant processing.[206]

Archaic Period (ca. 11,000-3,500 YBP)

The earliest Archaic Period lifeways in inland southern California have been given the name San Dieguito tradition, after the San Diego area where it was first identified and studied.[207] Characteristic artifacts include stemmed projectile points, crescents and leaf-shaped knives, which suggest a continued subsistence focus on large game, although not megafauna of the earlier Paleoindian period. Milling equipment appears in the archaeological record at approximately 7,500 years ago.[208] Artifact assemblages with this equipment include basin millingstones and unshaped manos, or grinding slabs used to process small, hard seeds from

---

205 Johnson, John R., Thomas W. Stafford, Jr., Henry O. Ajie, and Don P. Morris, Arlington Springs Revisited, Proceedings of the Fifth California Islands Symposium, edited by David R. Brown, Kathryn C. Mitchell and Henry W. Chaney, pp. 541–545, Santa Barbara Museum of Natural History, Santa Barbara, 2002.

206 PCR Services Corporation, Archaeological and Paleontological Resources Assessment for the Proposed Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, California, January 23, 2015 (Appendix I of the LAX *Landside Access Modernization Program Draft Environmental Impact Report*, September 15, 2016, Available: http://www.lawa.org/ourLAX/CurrentProjects.aspx?id=8807).

207 Warren, Claude N, "Cultural Tradition and Ecological Adaptation on the Southern California Coast", In Archaic Prehistory in the Western United States, C. Irwin-Williams, ed, pp. 1-4, Eastern New Mexico University Contributions in Anthropology, Portales, 1968.

208 Moratto, Michael J., California Archaeology, Academic Press, San Diego, p. 158, 1984.

plants, projectile points, flexed burials under cairns, and cogged stones, and have been given the name La Jolla Complex (7,500–3,000 YBP). The transition from San Dieguito lifeways to La Jolla lifeways appears to have been an adaptation to drying of the climate after 8,000 YBP, which may have stimulated movements of desert peoples to the coastal regions, bringing millingstone technology with them. Groups in the coastal regions focused on mollusks, while inland groups relied on wild-seed gathering and acorn collecting.

Late Prehistoric Period (ca. 3,500 YBP-A.D. 1769)

Cultural responses to environmental changes around 4,000–3,000 YBP included a shift to more land-based gathering practices. This period was characterized by the increasing importance of acorn processing, which supplemented the resources from hunting and gathering. The period after A.D. 1400 was identified as the San Luis Rey complex.[209] San Luis Rey I (A.D. 1400–1750) is associated with bedrock mortars and millingstones, cremations, small triangular projectile points with concave bases, and Olivella beads. The San Luis Rey II (A.D. 1750–1850) period is marked by the addition of pottery, red and black pictographs, cremation urns, steatite arrow straighteners and non-aboriginal materials.[210,211] Work at Cole Canyon and other sites in southern California suggest that this complex, and the ethnographically described lifeways of the native people of the region, were well established by at least 1,000 YBP. [212]

Ethnographic Setting - The Gabrielino

At the time of contact, the Native Americans subsequently known as the Gabrielino occupied lands around LAX; their territories comprised nearly the entire basin comprising the Counties of Los Angeles and Orange. They belonged to the Takic family of the Uto-Aztecan linguistic stock. Named after the Mission San Gabriel, the Gabrielino are considered to have been one of the two wealthiest and largest ethnic groups in aboriginal southern California,[213] the other being the Chumash in the Santa Barbara Channel region.

The Takic-speaking ancestors of the Gabrielino arrived in the Los Angeles basin around 1500 BC and spread throughout the area, displacing a preexisting Hokan-speaking population.[214] The first Spanish contact with the Gabrielino took place in 1520, when Juan Rodriguez Cabrillo arrived on Santa Catalina Island. In 1602, the Spanish returned to Santa Catalina under Sebastián Vizcaíno, and in 1769, Gaspar de Portolá made the first attempt to colonize Gabrielino territory. By 1771, the Spanish had built four missions, and the decimation of the Gabrielino had already begun.[215] European diseases and conflicts among the Gabrielino population, as well as conversion to Christianity, carried a toll in their numbers, traditions, and beliefs.

Although determining an accurate account of the population numbers is difficult, Bean and Smith[216], state that by AD 500, the Gabrielino established permanent settlements and their population continued to grow. Early Spanish accounts indicate that the Gabrielino lived in permanent villages with a population ranging from 50 to 200 individuals. The Gabrielino population surpassed 5,000 people by around 1770.

---

209 Meighan, C.W, "A Late Complex in Southern California Prehistory," Southwestern Journal of Anthropology 10:215–227, 1954.

210 Meighan, C.W, "A Late Complex in Southern California Prehistory," Southwestern Journal of Anthropology 10:223, 1954.

211 Keller, Jean K. and Daniel F. McCarthy, Data Recovery at the Cole Canyon Site (CA-RIV-139), Riverside, California, Pacific Coast Archaeological Society Quarterly, 25(1):6, 1989.

212 Keller, Jean K. and Daniel F. McCarthy, Data Recovery at the Cole Canyon Site (CA-RIV-139), Riverside, California, Pacific Coast Archaeological Society Quarterly, 25(1):80, 1989.

213 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 538, 1978.

214 Sutton, Mark Q., "People and Language: Defining the Takic Expansion into Southern California," Pacific Coast Archaeological Society Quarterly, 41(2&3): 31-93, 2009.

215 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, pp. 540-541, 1978.

216 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 540, 1978.

The Gabrielino practiced different subsistence strategies that included hunting, fishing, and gathering. Hunting activities in land were carried out with the use of bow and arrow, deadfalls, snares, and traps. Smoke and throwing clubs also were used to assist with the hunt of burrowing animals. Aquatic animals were hunted with harpoons, spear-throwers, and clubs. Although most fishing activities took place along rivers and from shore, open water fishing trips between mainland and the islands also took place using boats made from wood planks and asphaltum. The Gabrielino fishing equipment included fishhooks made of shells, nets, basketry traps, and poison substances obtained from plants. [217]

The Gabrielinos were involved in trade among themselves and with other groups. Coastal Gabrielinos exchanged steatite, shell and shell beads, dried fish, sea otter pelts, and salt with inland groups for acorns, seeds, obsidian, and deerskins. [218] During the late prehistoric period, the principal trade item, both among the Gabrielino and for export to other groups, was steatite. Also known as soapstone or soaprock, major outcroppings of steatite are found on Santa Catalina Island. Steatite was widely used among the Gabrielino to make arrow straighteners and artistic or ritualistic objects. In addition, this rock was used in the making of functional objects for food preparation such as bowls, mortars, pestles, and comals, or griddle.[219] Archaeological data indicate that a steatite "industry" developed prehistorically on the island that involved the large-scale trade of both raw materials and finished artifacts to mainland communities.[220]

4.3.3.3 Existing Surveys

Historical Structures

As discussed above in Section 4.3.1, evaluation of potential historical structures[221] within and adjacent to the proposed project site was conducted by HRG in June 2016.[222] As described in Section V.a. of the Initial Study for the proposed project (included in Appendix A of this Draft EIR), T2 was originally constructed in 1961 but was demolished and completely reconstructed in place in 1988. T2 is not eligible for listing as a historic resource and is not considered a historical resource as defined in the State CEQA Guidelines Section 15064.5. T3 was constructed in 1961 and is the only terminal on the north side of the CTA that includes one of the airport's original early-1960s oval-shaped satellite terminals. Terminal 3 has been substantially altered since 1961. Very little remains of the original T3 ticketing/baggage building with the exception of remnant ceramic tile cladding in some locations. T3 has also retained its original underground tunnel with mosaic tile murals[223] connecting the original (1961) ticketing/baggage building to the oval shaped satellite building. The T3 satellite, built in 1961, remains largely intact but its southern façade has been altered by the addition of an aboveground concourse pier connecting the ticketing/baggage claim buildings to the satellite. Alteration of the original ticketing/baggage building and the addition of the connecting concourse in the 1980s have substantially changed the original 1961 configuration of T3 such that its original form is only partially apparent. T3 no longer retains sufficient integrity to be eligible for listing as a historic resource and is not considered a historical resource as defined in State CEQA Guidelines Section 15064.5.

---

217 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 546, 1978.

218 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

219 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

220 Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

221 Listed or eligible for listing in the National Register of Historic Places or California Register of Historical Resources; included in a local register of historic resources.

222 Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016; included in Appendix A of this Draft EIR.

223 Construction and operation of the proposed project would not result in the demolition of the underground tunnel associated with the T3 concourse, including the ceramic mosaic tile mural.

Three identified historical structures that are historical resources as defined in State CEQA Guidelines Section 15064.5 are located in the vicinity of the proposed project site: 1) Theme Building (eligible for National Register, listed in California Register, and a designated City of Los Angeles HCM), located in the center of the CTA, approximately 550 feet southeast of the proposed project site, opposite World Way; 2) 1961 Air Traffic Control Tower (eligible for local listing as a City of Los Angeles HCM), located at the eastern entrance of the CTA, approximately 1,200 feet southeast of the proposed project site; and 3) Terminal 6 Sign Tower (eligible for local listing as a City of Los Angeles HCM), located approximately 1,020 feet southeast of the proposed project site. As described in Section V.a. of the Initial Study, construction and operation of the proposed project would not have the potential to cause a substantial adverse change in the significance of any of these three historical structures.

Archaeological Resources

The LAX Master Plan Final EIR identified 36 previously recorded archaeological sites within a radius of approximately two miles of LAX, including eight sites located on LAX property.[224] None of the eight sites identified on LAX property are located within the boundaries of the project site or in the immediate vicinity.

Results of the records search conducted for the LAX Landside Access Modernization Program[225] from the South Central Coastal Information Center (SCCIC) indicated no archaeological resources have been recorded at or within a half-mile radius of the proposed T2/3 project site. The project site is a highly disturbed area that has long been, and is currently being, used for airport uses. Any resources that may have existed on the site at one time are likely to have been displaced and, as a result, the overall sensitivity of the site with respect to buried resources is low.

Paleontological Resources

The LAX property lies in the northwestern portion of the Los Angeles Basin, a broad structural syncline with a basement of older igneous and metamorphic rocks overlain by thick younger marine and terrestrial deposits. The older deposits that underlie the LAX area are assigned to the Palos Verdes Sand formation. The Palos Verdes Sand formation is one of the better known Pleistocene age deposits in southern California. The unit was deposited in a shallow sea that covered the region some 124,000 years ago. These deposits have a high potential for yielding unique paleontological deposits. The Palos Verdes Sand formation covers half of the LAX area, beginning at Sepulveda Boulevard and extending easterly beyond the airport.[226]

The records search included as Appendix C to this Draft EIR, which was originally conducted for the LAX Landside Access Modernization Program[227] from the Vertebrate Paleontology Department at the Natural History Museum of Los Angeles County (NHMLAC), indicated that there were no known paleontological localities within the site associated with the proposed project. However, museum records indicated that one fossil locality (LACM 3264 – baby elephant) was recorded in the vicinity of the project site, near the Tom Bradley International Terminal. These fossils were discovered at depth of approximately 25 feet below

---

224 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.9.1 – Historic/Architectural and Archaeological/Cultural Resources, April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

225 The study area for the archaeological and paleontological resources assessment for the LAX Landside Access Modernization Program included areas within the CTA, some of which are adjacent to the project site; refer to Figure 2 in PCR Services Corporation, Archaeological and Paleontological Resources Assessment for the Proposed Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, California, January 23, 2015, which is included in Appendix C of this EIR.

226 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.9.2 – Paleontological Resources, April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

227 The study area for the archaeological and paleontological resources assessment for the LAX Landside Access Modernization Program included areas within the CTA, some of which are adjacent to the project site; refer to Figure 2 in PCR Services Corporation, Archaeological and Paleontological Resources Assessment for the Proposed Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, California, January 23, 2015. Appendix C of this Draft EIR

the surface. In 2013, invertebrate (shell) fossil specimens were encountered during construction monitoring services for the LAX Central Utility Plant Replacement Project within the CTA. These resources were encountered during trench excavations for an underground vault immediately south of the Theme Building at a depth of approximately 10 to 12 feet.

Tribal Cultural Resources

Results of the updated SLF search through the NAHC did not indicate any newly inventoried Native American cultural resources within the project area. The NAHC results also noted, however, that the absence or resource information in the SLF inventory does not preclude the discovery of cultural resources within any project area.[228]

At the time of the publication of the Notice or Preparation for the proposed project, LAWA had not received a written request from any tribe indicating its wish to be notified of projects within its traditionally and culturally affiliated areas, as required by Public Resources Code Section 21080.3.1(b). Nevertheless, in a letter dated November 24, 2015, NAHC recommended that as AB 52 best practice, agencies should initiate consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions."[229] LAWA initiated the proposed project prior to the July 1, 2016 date by which NAHC was required to provide each tribe with a list of all public agencies that may be lead agencies under CEQA within the geographic area with which the tribe is traditionally and culturally affiliated. In light of the timing of project initiation, and consistent with NAHC-suggested "best practice" procedures, letters were sent via certified mail on March 15, 2016 to the six Native American individuals and organizations identified by the NAHC in November 2015 as being affiliated with the vicinity of the project area[230] to request information or concerns they may have about Native American cultural resources that may be affected by the proposed project.[231,232] Each Native American group and/or individual listed was sent a project notification letter and map and was asked to convey any knowledge regarding prehistoric or Native American resources (archaeological sites, sacred lands, or artifacts) located within the project area or surrounding vicinity. The letter included information such as project location, a brief description of the proposed project, and results of a previous cultural resources assessment that included the CTA.[233] A response was received on April 12, 2016 from one Native American tribe. That response did not identify any known Tribal cultural resources that may be affected by the proposed project. Per the mutual agreement of LAWA and the tribe in a telephone

---

228 Gayle Totton, NAHC, email to Dorothy Meyer, CDM Smith, Subject: RE: Proposed Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project, City of Los Angeles; Venice USGS Quadrangle, Los Angeles County, California (SLF Search Results), September 14, 2016.

229 Rob Wood, NAHC, letter to Angelica Espiritu, City of Los Angeles, Los Angeles World Airports, Subject: RE: Los Angeles International Airport (LAX) Terminal 1.5 Project, City and County of Los Angeles (Consultation List and SLF Search Results), November 24, 2015.

230 Public Resources Code Section 21080.3.1(c) states "To expedite the requirements of this section, the Native American Heritage Commission shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the project area."

231 As described in Section 4.3.3.1, per the notification steps specific in AB 52, the NAHC is required to provide each tribe with a list of all public agencies that may be lead agencies under CEQA within the geographic area with which the tribe is traditionally and culturally affiliated, the contact information of those public agencies, and information on how the Tribe may request consultation. This list must be provided on or before July 1, 2016 (Public Resources Code Section 5097.94(m)). If a tribe wishes to be notified of projects within its traditionally and culturally affiliated area, the tribe must submit a written request to the relevant lead agency (Public Resources Code Section 21080.3.1(b)). Although not required by AB 52, LAWA, in accordance with "best practice" suggested by NAHC to ensure that tribes are consulted, on March 15, 2015, LAWA sent letters of "Formal Notification of Determination of a Decision to Undertake a Project and Notification of Consultation Opportunity" for the proposed project and the adjacent LAX Terminal 1.5 Project to the Gabrielino/Tongva tribes and the Soboba Band of Mission Indians.

232 Per an electronic mail message received from NAHC on January 14, 2016, the Native American consultation list received from NAHC for the adjacent LAX Terminal 1.5 Project on November 24, 2015, was approved for use for the proposed project.

233 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, (SCH 1997061047), Section 4.5 – Cultural Resources, and Appendix E, Cultural Resources, January 2013.

conversation and via electronic mail, formal consultation, which was initiated to fulfill the intent of Public Resources Code Section 21080.3.1(b), concluded.

4.3.4 Thresholds of Significance

A significant impact on cultural resources would occur if the proposed project would result in:

- A substantial adverse change in the significance of a "historical resource" as defined by State CEQA Guidelines Section 15064.5(a). Substantial adverse change means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. The significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the National Register, California Register, and/or local register. Potential impacts related to a substantial adverse change in the significance of a historical structure resource as that are defined in the State CEQA Guidelines Section 15064.5(a) as historical resources were evaluated and determined to have a "Less than Significant Impact" in the Initial Study (Refer to Section V.a. of the Initial Study for the proposed project, which is included in Appendix A of this Draft EIR). Therefore, this threshold is not analyzed further in this Draft EIR.
- Causing a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.
- Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.
- Cause a substantial adverse change in the significance of a Tribal cultural resource as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:
  - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- Disturbance of any human remains, including those interred outside of formal or dedicated cemeteries.

All but the Tribal cultural resources thresholds are derived from Appendix G of the State CEQA Guidelines. The Tribal cultural resources threshold (fourth threshold) is derived from Public Resources Code Section 21074, Section 5020.1(k), and Section 5024.1.

4.3.5 Impacts Analysis

4.3.5.1 Archaeological Resources

The cultural resource records search indicated that no previously recorded archaeological resources (including historic or prehistoric archaeological resources) have been recorded at or within a half-mile radius of the project site (Appendix C of this EIR). The project area (including the project site and construction staging and parking areas) is located within a highly urbanized area and has been subject to disturbance by airport operations and development, and other on-going construction activities. Thus, surficial archaeological resources that may have existed at one time have likely been displaced by these disturbances. While discovery of archaeological resources in artificial fill deposits within the project area is unlikely, proposed excavations that would occur below the fill levels could impact intact archaeological resources that have not been disturbed or displaced by previous development. Since the proposed project would include excavations of varying depths across portions of the project site, including excavations at

depths where native soils would be encountered, the proposed project could impact previously unknown buried archaeological resources that fall within the definition of historical resources or unique archaeological resources. Thus, impacts to archaeological resources would be significant.

4.3.5.2 Paleontological Resources

The paleontological resources records search indicated that no previously recorded vertebrate fossil localities from the NHMLAC database are located within the project area (including the project site and construction staging and parking areas). However, museum records indicated that one fossil locality (LACM 3264 – baby elephant) was recorded in the vicinity of the project site, near the Tom Bradley International Terminal (Appendix C of this EIR). As mentioned previously, the project area is located within a highly urbanized area and has been subject to disturbance by airport operations and development, and other on-going construction activities that have likely displaced surficial paleontological resources. While discovery of paleontological resources in artificial fill deposits within the project area is unlikely, proposed excavations at the project site that would occur below the fill levels could impact intact paleontological resources that have not been disturbed or displaced by previous development. Since the proposed project would include excavations of varying depths across portions of the project site, including excavations at depths where native soils would be encountered, the proposed project could impact previously unknown buried unique paleontological resources. Thus, impacts to paleontological resources would be significant.

4.3.5.3 Tribal Cultural Resources

There are no Tribal cultural resources, as defined in Public Resources Code Section 21074, known to LAWA on the project site or the proposed construction staging and parking areas, or in their immediate vicinity. The project site and the proposed construction staging and parking areas are highly disturbed. In accordance with "best practice" suggested by NAHC to ensure that tribes are consulted, LAWA sent letters of "Formal Notification of Determination of a Decision to Undertake a Project and Notification of Consultation Opportunity" to California Native American tribes with a traditional or cultural affiliation with the geographic area of the proposed project, as identified by the NAHC. Although LAWA received one response to LAWA's initial request for consultation, to date, no Native American tribes have identified any known Tribal cultural resources that may be affected by the proposed project. As noted under Section 4.3.3.2.2 above, the one response received from a Native American tribe did not identify any known Tribal cultural resources that may be affected by the proposed project. Per the mutual agreement of LAWA and the tribe in a telephone conversation and via electronic mail, formal consultation, which was initiated to fulfill the intent of Public Resources Code Section 21080.3.1(b), concluded. Based on consultation, the proposed project would not cause a substantial adverse change in the significance of a Tribal cultural resource as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

As described above, the project site and construction staging area are within a highly urbanized area that has been subject to disturbance by airport operations and development, placement of artificial fill, grading, and other on-going construction activities; there are no known Tribal cultural resources at the project site and construction staging area and vicinity, and, no Native American tribes have identified any known Tribal cultural resources that may be affected by the proposed project. Therefore, the discovery of Tribal cultural resources within the project area is unlikely. Based on the above analysis, impacts on Tribal cultural resources would be less than significant.

It should be noted that implementation of archaeological resource Mitigation Measure LAX-AR-1, Archaeological Treatment Plan[234] (ATP), would also further reduce the potential for impacts on Tribal cultural resources. Under this mitigation measure, excavation of native soils would be monitored by a qualified Cultural Resource Monitor, and if any Tribal cultural resources are found during construction, the airport would ensure that work would temporarily stop in the immediate vicinity of the find(s) and a qualified archaeologist would be contacted to assess significance and determine appropriate protection or recovery procedures. Section 5.2 of LAWA's ATP includes protocols for Native American monitoring in the event of the discovery during construction of an archaeological resource or Native American remains.

4.3.5.4 Human Remains

As discussed earlier, a SLF search from the NAHC did not indicate the presence of Native American cultural resources from the NAHC archives within the project area or surrounding vicinity. Results of the cultural resource records search through the SCCIC did not indicate the presence of any known human remains within the project area. As stated above, the project area (including the project site and construction staging and parking areas) is located within a highly urbanized area and has been subject to disturbance by airport operations and development, and other on-going construction activities. Thus, surficial human remains resources that may have existed at one time have likely been displaced by these disturbances. While discovery of human remains in artificial fill deposits within the project area is unlikely, proposed excavations that would occur below the fill levels could impact intact human remains that have not been disturbed or displaced by previous development. Since the proposed project would include excavations of varying depths, including excavations at depths where native soils would be encountered, the proposed project could impact previously unknown buried human remains. However, LAWA would comply with guidance as to the treatment of any human remains that are encountered during construction excavations, including the procedures outlined in Section 7050.5(b) and (c) of the State Health and Safety Code, and Section 5097.94(k) and (i) and Section 5097.98(a) and (b) of the Public Resources Code. Therefore, through compliance with state and local regulations, impacts from disturbance of any human remains, including those interred outside of formal or dedicated cemeteries, would be less than significant.

4.3.6 Cumulative Impacts

The cumulative impacts analysis evaluates the impacts of the project on cultural resources in conjunction with past, present, and reasonably foreseeable probable future projects including both LAX and non-LAX development projects, as listed in Tables 3-1 and 3-2. The implementation of the project when combined with these other projects could result in cumulative impacts to cultural resources if the combined impacts would exceed the identified threshold of significance.

Table 3-1 identifies other projects and improvements at and adjacent to LAX, including a number of terminal improvement projects, the majority of which involve interior improvements, within the CTA. None of the terminal improvement projects would result in a direct physical impact to any known archaeological, paleontological, tribal cultural resources, or human remains in the CTA. The project area is located within a highly urbanized area and has been subject to disturbance by airport operations and development, and other on-going construction activities. Thus, surficial archaeological resources, paleontological resources, Tribal cultural resources, and human remains that may have existed at one time have likely been displaced by these disturbances. While discovery of archaeological resources, paleontological resources, Tribal cultural resources, and human remains in artificial fill deposits within the project area is unlikely, excavations associated with the proposed project and other development projects at/adjacent to LAX could occur below the fill levels could impact archaeological resources, paleontological resources, Tribal cultural resources, and human remains that have not been disturbed or displaced by previous development. Therefore, the proposed project in combination with other proposed projects at and adjacent to LAX could result in significant cumulative impacts on cultural resources that are unique archaeological resources and unique

[234] City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan: Mitigation Monitoring & Reporting Program - Archaeological Treatment Plan, prepared by Brian F. Smith and Associates. June 2005.

paleontological resources, and therefore the proposed project's contribution would be cumulatively considerable for each of these cultural resources categories. Given that the discovery of Tribal cultural resources is unlikely and through compliance with the ATP, cumulative impacts from an adverse change to Tribal cultural resources would be less than significant. Through compliance with guidance as to the treatment of human remains that could be encountered during construction excavations, such as the procedures outlined in Section 7050.5(b) and (c) of the State Health and Safety Code, Section 5097.94(k) and (i) and Section 5097.98(a) and (b) of the Public Resources Code, cumulative impacts from disturbance of any human remains, including those interred outside of formal or dedicated cemeteries, would be less than significant. In addition to Table 3-1, there are other projects within the general area (such as, but not limited to, those represented in Table 3-2), that, could have an impact to archaeological resources, paleontological resources, Tribal cultural resources, and human remains that have not been disturbed or displaced by previous development. Therefore, the proposed project in combination with other probable development projects could result in significant cumulative impacts on cultural resources that are unique archaeological resources and unique paleontological resources, and therefore the proposed project's contribution would be cumulatively considerable for each of these cultural resources categories.

4.3.7 Mitigation Measures

As indicated in Section 4.3.5, impacts to cultural resources would be significant. The following mitigation measures are proposed to reduce significant impacts to cultural resources.

4.3.7.1 Archaeological Resources

The following Standard Control Measures are proposed as mitigation measures to reduce significant impacts to archaeological resources.

- **LAX-AR-1. Conformance with LAWA's Archaeological Treatment Plan.**

  Prior to initiation of any project-related grading or excavation activities, LAWA shall retain an on-site Cultural Resource Monitor (CRM), as defined in LAWA's Archaeological Treatment Plan (ATP),[235] who will determine if the proposed project is subject to archaeological monitoring. As defined in the ATP, areas are not subject to archaeological monitoring if they contain redeposited fill or have previously been disturbed (i.e., areas where project-related excavation extends into re-deposited fill or other previously disturbed soils are considered unlikely to contain/yield notable cultural resources, and therefore do not require monitoring). LAWA shall retain an archaeologist to monitor excavation activities in native or virgin soils in accordance with the detailed monitoring procedures and other procedures outlined in the ATP regarding treatment for previously unidentified archaeological resources that are encountered during construction. Monitoring will be subject to the provisions identified below.

  Monitoring Requirements. In accordance with the ATP, the CRM will compare the known depth of redeposited fill or disturbance to the depth of planned grading activities, based on a review of construction plans that provide details about the extent and depth of project-related grading and other development-related data, such as geotechnical investigations that include soils borings and delineation of subsurface strata types. Such detailed information regarding excavation plans and subsurface investigations will be completed and made available prior to the start of grading and construction. If the CRM determines, based on the detailed plans and data, that all or specific portions of the proposed project area warrant archaeological monitoring during grading activities, a qualified archaeologist (an archaeologist who satisfies the Secretary of the Interior's Professional Qualifications Standards [36 CFR 61]) shall be retained by LAWA to inspect excavation and grading activities that occur within native material. The extent and frequency of inspection shall be defined based on consultation with the archaeologist and the requirements of the ATP, which stipulates that ground-disturbing activity in areas designated as having a high potential for subsurface archaeological deposits

[235] City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan: Mitigation Monitoring & Reporting Program - Archaeological Treatment Plan, prepared by Brian F. Smith and Associates. June 2005.

will be monitored full time, and such activities in areas designated as potentially containing redeposited fill or having been disturbed will be monitored periodically or suspended entirely as determined by the consulting archaeologist and LAWA. Following initial inspection of excavation materials, the archaeologist may adjust inspection protocols as work proceeds.

Identification, Evaluation, and Recovery. In accordance with State CEQA Guidelines Section 15126.4(b)(1), should archaeological resources that are either historical resources or unique archaeological resources be discovered, preservation in place is the preferred manner for mitigating impacts to archaeological sites. When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Identification, evaluation, and recovery of cultural resources shall be conducted in accordance with the methods established in the ATP including, but not limited to, methods pertaining to surface recordation, shovel test excavations, test unit excavations, laboratory analysis, reporting, and curation. If potentially significant resources are identified, the monitoring archaeologist shall be empowered to halt construction activities within 25 to 50 feet of the identified resource. If Native American cultural resources are encountered, LAWA shall comply with guidance established in the ATP for retaining a Native American monitor including, but not limited to, notification of the NAHC and, based on the recommendations from NAHC, retention of a Native American monitor from a list of suitable candidates supplied by NAHC. If human remains are found, LAWA shall comply with the State Health and Safety Code 7050.5 regarding the appropriate treatment of those remains as outlined in the ATP, which requires notification of the Los Angeles County Coroner's Office, notification of the NAHC and the Most Likely Native American Descendent if the remains are those of a Native American, immediately halting field work or grading in any area reasonably suspected to overlie adjacent human remains, cordoning off the site, and proper treatment and burial.

Reporting and Curation. Reporting shall be completed in conformance with the guidelines set forth by the Office of Historic Preservation for Archaeological Research Management Reports and requirements established in the ATP pertaining to the contents of the Archaeological/Cultural Monitor Report. Proper curation and archiving of artifacts shall be conducted in accordance with industry and federal standards and as outlined in the ATP.

- **LAX-AR-2. Archaeological Resources Construction Personnel Briefing.**

  Prior to initiation of grading activities, LAWA will require the consulting archaeologist to provide construction personnel with a briefing in the identification of archaeological resources and in the correct procedures for notifying the relevant individuals should such a discovery occur.

4.3.7.2 Paleontological Resources

The following Standard Control Measures are proposed as mitigation measures to reduce significant impacts to paleontological resources.

- **LAX-PR-1. Conformance with LAWA's Paleontological Management Treatment Plan (PMTP).**

  Prior to initiation of grading activities, LAWA will retain a professional paleontologist, as defined in LAWA's PMTP, who will determine if the proposed site exhibits a high or low potential for subsurface resources. As defined in the PMTP, areas are not subject to paleontological monitoring if they contain re-deposited fill or have previously been disturbed (i.e., areas where project-related excavation extends into re-deposited fill or other previously disturbed soils are considered unlikely to contain/yield notable paleontological resources, and therefore do not warrant monitoring). If the project site is determined to exhibit a high potential for paleontological resources, paleontological monitoring will be conducted by a professional paleontologist. If the project site is determined to exhibit a low potential for subsurface deposits, excavation need not be monitored as per the PMTP.

  Monitoring Requirements. In accordance with the PMTP, LAWA will supply the paleontological monitor (PM) with a construction schedule and any construction, grading, excavation and/or shoring plans prior to the initiation of ground-disturbing activities. LAWA will also provide the PM access to geotechnical studies completed for the project that contain information indicating subsurface strata types, which can help delineate the areal extent and depth of previously disturbed areas as distinguished from undisturbed areas. Emphasis in identifying construction areas that warrant monitoring will be placed on the specific portions of the project area identified as exhibiting a high potential for subsurface resources, based on the location of known paleontological localities and/or resources and the identification of areas in which no known disturbances have occurred. The identification of areas to be monitored will be made by the on-site PM or PM designee in consultation with the appropriate LAWA representative, construction supervisor, and/or geologist, and in accordance with the requirements of the PMTP. Areas of low potential for subsurface paleontological deposits, as documented by technical sources to be underlain by fill materials, or areas that exhibit a high degree of previous disturbance, based on soil testing will not be monitored. If excavation activities are scheduled to go below the documented level of fill materials, paleontological monitoring will be initiated when formational sediments are expected to be reached by earthmoving activities.

  Identification, Evaluation, and Recovery. The PM or PM designee will identify, evaluate, and recover paleontological resources in accordance with the relevant provisions of the PMTP including, but not limited to, monitoring parameters and specifications, safety issues, paleontological resource collection, fossil preparation and curation procedures, fossil donation protocols, and reporting.

- **LAX-PR-2. Paleontological Resources Construction Personnel Briefing.**

  Prior to initiation of grading activities, the PM or PM designee will brief construction personnel in the identification of fossils or fossiliferous deposits and in the correct procedures for notifying the relevant individuals should such a discovery occur.

4.3.8 Level of Significance After Mitigation

4.3.8.1 Archaeological Resources

With implementation of Standard Control Measures (Mitigation Measures) LAX-AR-1 and LAX-AR-2, potentially significant impacts to archaeological resources that are historical resources or unique archaeological resources would be reduced to a level that is less than significant and the proposed project's contribution to potentially significant cumulative impacts on archaeological resources would not be cumulatively considerable. Standard Control Measures (Mitigation Measures) LAX-AR-1 and LAX-AR-2 require conformance with LAWA's ATP, which contains detailed monitoring procedures and other protocols regarding the treatment of previously unidentified archaeological resources that may be encountered during construction, and briefing by a qualified archaeologist to construction personnel in the identification of archaeological resources and in the correct procedures for notifying the relevant individuals should such a discovery occur. Standard Control Measures (Mitigation Measures) LAX-AR-1 and LAX-AR-2 would ensure that the proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.

4.3.8.2 Paleontological Resources

With implementation of Standard Control Measures (Mitigation Measures) LAX-PR-1 and LAX-PR-2, potentially significant impacts to paleontological resources would be reduced to a level that is less than significant and the proposed project's contribution to potentially significant cumulative impacts on paleontological resources would not be cumulatively considerable. Standard Control Measures (Mitigation Measures) LAX-PR-1 and LAX-PR-2 require conformance with LAWA's PMTP, which contains detailed monitoring procedures and other protocols regarding the treatment of previously unidentified paleontological resources that may be encountered during construction, and briefing by a qualified paleontologist/designee to construction personnel in the identification of paleontological resources and in the correct procedures for notifying the relevant individuals should such a discovery occur. Standard Control Measures (Mitigation Measures) LAX-PR-1 and LAX-PR-2 would ensure that the proposed project would not cause the direct or indirect destruction of a unique paleontological resource or site or unique geologic feature.

This page left intentionally blank

4.4 Construction Surface Transportation

4.4.1 Introduction

The traffic analysis presented in this section addresses the proposed project's construction traffic impacts. The construction traffic impacts were determined for both the peak construction period for the proposed project (March 2020) (refer to Sections 4.4.2.3 and 4.4.3.7 for details) and the peak cumulative condition (November 2019) (refer to Section 4.4.2.4 for details). The peak construction month for the proposed project does not correspond to the peak cumulative condition, which includes traffic from the construction of other projects projected to be under construction during the construction schedule (October 2017 through December 2023). Additionally, this section addresses temporary traffic, access, and transit impacts during construction.

This proposed project construction traffic analysis builds upon relevant analysis and assumptions, including those for the cumulative impacts analysis (i.e., past, present, and reasonably foreseeable probable future projects) such as analyses from the Los Angeles International Airport (LAX or the "Airport") Master Plan EIR,[236] the South Airfield Improvement Project (SAIP) EIR,[237] the Crossfield Taxiway Project (CFTP) EIR,[238] Bradley West Project EIR,[239] Central Utility Plant Replacement Project (CUP-RP) EIR,[240] Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project EIR,[241] West Aircraft Maintenance Area (WAMA) Project EIR,[242] Midfield Satellite Concourse (MSC) EIR,[243] Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA North) EIR,[244] and the Landside Access Modernization Program (LAMP) Draft EIR.[245] Analysis procedures and data from these other projects were applied and updated as appropriate for the proposed project's cumulative impact analysis.

The construction traffic analysis study area is depicted in **Figure 4.4-1**. Construction employee parking, material delivery, and staging associated with the construction of the proposed project would be split between multiple lots, which are depicted in the **Figure 4.4-1**.

It is assumed that construction contractor parking would occur at Lot P1 located southeast of the intersection of Century Boulevard and Avion Drive, with workers being shuttled to and from the Central Terminal Area (CTA)/project site via Century Boulevard and World Way. Understanding that the availability of Lot P1 for project-related construction employee parking can change between now and when project construction occurs, Lot P1 can also be used for airport public parking or airport employee parking, or the

---

236 City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004.

237 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) South Airfield Improvement Project, (SCH 2004081039), October 2005.

238 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Crossfield Taxiway Project, (SCH 2008041058), January 2009.

239 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, (SCH 2008121080), September 2009.

240 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Central Utility Plant Project, (SCH 2009041043), October 2009.

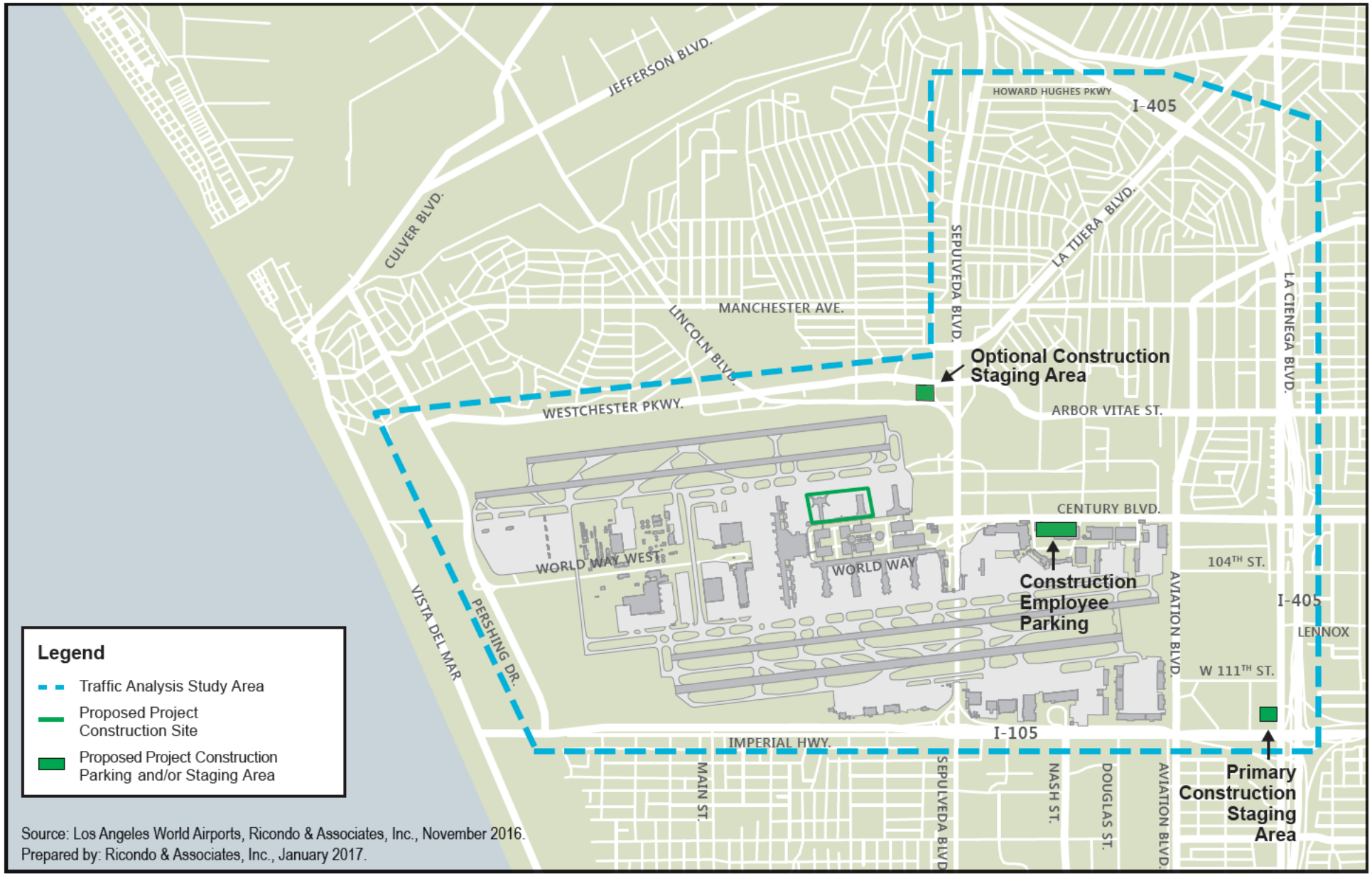
241 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project, (SCH 2012101019), January 2014.

242 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) West Aircraft Maintenance Area (WAMA) Project, (SCH 2012091037), February 2014.

243 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse (MSC), (SCH 2013021020), June 2014.

244 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA) and Associated Improvement Projects, (SCH 2014051040), June 2014.

245 City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program, (SCH 2015021014), Section 4.12.3, Construction Surface Transportation, and Appendix P, Construction Traffic, September 2016.



Source: Los Angeles World Airports, Ricondo & Associates, Inc., November 2016.
Prepared by: Ricondo & Associates, Inc., January 2017.

Terminals 2 and 3 Modernization Project

Construction Traffic Analysis Study Area

Figure
4.4-1

project contractor may choose to utilize other parking lots in the nearby area, it is recognized that there are additional parking lots in the immediate area that offer project site access characteristics generally similar to those of Lot P1. Such additional parking lots, along with Lot P1, are identified on **Figure 4.4-5**. Construction staging would occur on either an existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area – designated on **Figure 4.4-1** as 'Primary Construction Staging Area'); or on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area – designated on **Figure 4.4-1** as 'Optional Construction Staging Area'). This analysis assesses construction-related traffic impacts at off-airport intersections associated with the construction of the proposed project, including the traffic impacts of construction employee vehicles and shuttles, construction equipment, material delivery trucks, and truck trips associated with the proposed project.

This direct impact analysis addresses, in particular, the impacts from construction-related traffic that would occur during the peak construction period for the proposed project. The construction traffic analysis combines peak project-related traffic volumes with roadway traffic volumes occurring in the a.m. and p.m. commuter peak hours. The analysis provides an estimate of the construction-related traffic impacts within the off-airport public roadway system serving construction-related vehicles generated by the proposed project. The construction traffic impact analysis also qualitatively analyzes impacts of traffic disruptions (e.g., lane closures) within the CTA.

4.4.2 Methodology

4.4.2.1 Overview

As noted above, this analysis focuses on construction impacts of the proposed project. The analysis methodology for this EIR is based largely on the approach and data used for the Bradley West Project EIR, CUP-RP EIR, Runway 7L/25R RSA EIR, WAMA EIR, MSC EIR, RSA North EIR, and LAMP Draft EIR. The analyses, procedures, and data from these previous projects are applicable to the proposed project because these projects share many of the same characteristics related to vehicle peaking patterns and travel paths.

The construction traffic study area includes intersections and roadways that would be directly or indirectly affected by the construction of the proposed project. Construction employee parking and material staging (two alternative locations) for the proposed project are proposed at multiple locations in the vicinity of the Airport, as further described below. The construction traffic study area for this analysis includes those roads and intersections that would most likely be used by employee and truck traffic associated with construction of the proposed project. The procedures are also consistent with the information and requirements defined in City of Los Angeles Department of Transportation (LADOT) Traffic Study Policies and Procedures,[246] notwithstanding that a construction traffic analysis is not typically required by LADOT.

The following steps and assumptions were used to develop the analysis methodology:

- The construction traffic study area depicted in Figure 4.4-1 was defined to incorporate the local area roadways that serve as the primary travel paths that would be used by construction traffic to access the proposed project site, equipment, materials staging, and parking areas.
- Intersection turning movement traffic volume data were collected at key traffic study area intersections over a two-year period (2013 to 2015) from 7:00 a.m. to 9:00 a.m., and from 4:00 p.m. to 6:00 p.m. The traffic count periods were established to obtain traffic count data during the a.m. and p.m. peak commuter periods and represent the most recent counts at the construction traffic study area intersections. These counts were used as a basis for preparing the construction traffic analysis and assessing project-related traffic impacts. This approach provides a conservative impact analysis by

[246] City of Los Angeles Department of Transportation, Traffic Study Policies and Procedures, August 2014.

addressing situations when avoidance of the morning or afternoon commuter peak period is not possible. The estimated peak hours for construction-related traffic were determined by reviewing the estimated hourly construction-related trip activity for the proposed project developed for this study. The a.m. peak hour was determined to be 7:00 a.m. to 8:00 a.m. and the p.m. peak hour was determined to be 4:00 p.m. to 5:00 p.m.

The following describes the methodology and assumptions underlying the various traffic conditions considered in this traffic analysis, and how the proposed project's direct and cumulative impacts were identified relative to those conditions.

4.4.2.2 Determination of Baseline Traffic Conditions

Baseline conditions used in the analysis of project-related construction traffic impacts are defined as the existing conditions within the construction traffic study area at the time of the analysis (November 2016). Intersection turning movement volumes were collected over a two-year period (2013 to 2015), representing the most current comprehensive traffic counts completed by LAWA. Additionally, LAWA conducts annual driveway volume counts at various locations throughout the Airport (including those adjacent to public parking lots, employee parking lots, cargo facilities, rental car facilities, and off-Airport parking facilities). Furthermore, LAWA collects annual traffic volume counts each August along the CTA roadways to estimate annual growth in Airport traffic. Considering the location of the study area intersections, it was determined that each intersection contains a mix of both Airport-related traffic and non-Airport-related traffic. Consequently, both the driveway count data and CTA data were used to establish a growth rate to adjust the 2015 traffic volumes to 2016 levels. These data are reasonably representative of existing traffic conditions at the time the EIR Notice of Preparation was published (August 2016). The a.m. traffic volumes were increased by 12.1 percent, while the p.m. traffic volumes were increased by 11.2 percent.[247] These volumes were used as a basis for preparing the construction traffic analysis and assessing project-related construction traffic impacts. The following steps were taken to develop baseline traffic conditions information. Additionally, given temporary effects of street closures caused by construction of the Metro Crenshaw/LAX Transit Corridor, the use of this data with the driveway count and CTA roadway data provides the most accurate assessment of baseline traffic patterns within the study area.

Prepare Model of Study Area Roadways and Intersections - A model of construction traffic study area roadways and intersections was developed to assist with intersection capacity analysis (i.e., geometric configuration, quantitative delineation of capacity, and operational characteristics of intersections likely to be affected by the proposed project's traffic). The model was developed using TRAFFIX,[248] a commercially available traffic analysis software program designed for developing traffic forecasts and analyzing intersection and roadway capacities. The model uses widely accepted traffic engineering methodologies and procedures, including the Transportation Research Board Critical Movement Analysis (CMA) Circular 212 Planning Method,[249] which is the required intersection analysis methodology for traffic impact studies conducted within the City of Los Angeles.

Calculate Baseline (2016) Levels of Service - Intersection levels of service were calculated using the most recent intersection traffic volumes coinciding with the a.m. peak hour (7:00 a.m. to 8:00 a.m.) and the p.m. peak hour (4:00 p.m. to 5:00 p.m.). These levels of service defined existing baseline conditions which served as a basis of comparison for assessing impacts generated by construction of the proposed project.

---

247 Ricondo and Associates, LAX Terminals 2 and 3 Traffic Volume Adjustment, December 2016.

248 Dowling Associates, TRAFFIX Version 7.7.

249 Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.

4.4.2.3 Determination of Baseline Plus Peak Proposed Project Traffic Conditions

This construction traffic analysis was designed to assess the direct impacts associated with the construction of the proposed project, as well as the effects of future cumulative conditions. For purposes of determining direct project-related impacts, two traffic scenarios were developed consisting of baseline traffic described above plus the additional traffic that would be generated by the proposed project construction activity during the peak construction period. The difference in the two traffic scenarios relates to the location of the material staging area. One scenario corresponds to the material staging area being located on an existing industrial parcel on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area), while the second scenario corresponds to the material staging area being located on an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area). The following steps were conducted to determine the Baseline Plus Peak proposed project traffic volumes. Detailed traffic volumes of Baseline Plus Peak are presented in Appendix D.2.

Analyze Peak Proposed Project Construction Activity - Vehicle trips associated with construction of the proposed project during the peak month of construction activity were estimated and distributed throughout the construction traffic study area network. The trips were estimated based on a review of the proposed project construction schedules and associated workforce levels and equipment, including trucks and other construction vehicles. Project-related construction trips were summarized to delineate peak month inbound and outbound construction employee trips and truck trips by hour of the day. The estimate of proposed project construction trips was based on construction employee workload schedules prepared for the proposed project. The construction employee trip distribution patterns were based on regional patterns developed for the proposed project and previous LAWA construction traffic studies, specific haul route information, airline passenger survey information, and regional population distributions. Detailed information regarding traffic distribution patterns is presented in Appendix D.4.

Estimate Baseline (2016) Plus Peak Proposed Project Traffic Volumes – The estimated Baseline Plus Peak proposed project (referred to hereinafter as Baseline Plus Project) traffic volumes were estimated by adding the proposed project volumes during the peak proposed project activity period (March 2020) to the baseline (2016) volumes.

4.4.2.4 Determination of Future Cumulative Traffic Conditions

In addition to the Baseline Plus Project condition described above, future cumulative traffic conditions were analyzed. For this traffic analysis, cumulative traffic conditions were assessed for the period during the overall proposed project construction program when the cumulative construction traffic associated with other LAX development programs would be greatest. This peak cumulative period was estimated to occur during November 2019.

In accordance with State CEQA Guidelines Section 15130(b), there are essentially two options for determining cumulative development for evaluating cumulative impacts:

a. List past, present, and reasonably foreseeable probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
b. Summarize projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program.

For purposes of analyzing the proposed project's cumulative construction traffic impacts, a hybrid of the two approaches was used. Section 4.4.3.8 provides descriptions of cumulative projects and how the traffic generation related to those projects would overlap with that of the proposed project. Also, using the

"projection" approach, background traffic was increased to reflect additional growth from non-specific projects, which may include both Airport- and/or non-Airport related projects. The construction traffic analysis assumed a two percent annual growth in background traffic which produces a conservative traffic volume scenario that would account for additional construction-related traffic in the event that additional construction projects are initiated during the timeframe evaluated for this study. This annual growth rate assumption is consistent with previous direction first provided by LADOT for use in the SAIP construction traffic analysis[250] and subsequently used for construction traffic studies prepared for the CFTP EIR, Bradley West Project EIR, CUP-RP EIR, Runway 7L/25R RSA Project EIR, WAMA Project EIR, MSC EIR, RSA North EIR, and LAMP Draft EIR.

Cumulative conditions were determined based on two sets of future cumulative traffic volume conditions, as described below. Detailed traffic volumes related to the cumulative conditions are presented in Appendix D.2.

Cumulative Traffic (November 2019) Without Project

This scenario combines baseline traffic volumes with growth from all sources other than the proposed project to determine the overall peak cumulative traffic conditions during the construction period for the proposed project. The following steps were taken to develop the traffic volumes for this scenario.

Develop November 2019 Focused Traffic Study Area Roadway Network - Though it is possible additional improvements would be in place prior to the peak cumulative traffic period (November 2019), for purposes of this analysis, it has been conservatively assumed that no additional roadway improvements would be in place. Therefore, the baseline 2016 traffic study area roadway network was held constant to 2019.[251]

Estimate November 2019 Cumulative (Without Project) Traffic Volumes - Cumulative (November 2019) traffic volumes were estimated using the following process:

- As described above, baseline traffic volumes were multiplied by a growth factor of two percent per year to account for local background traffic growth through 2019. Furthermore, this annual growth rate is more conservative than what is projected for the South Bay/LAX area in the 2010 Congestion Management Program,[252] which estimates an annual growth of approximately 0.3 percent, providing a conservative analysis.
- Construction trips associated with the peak period of cumulative construction (November 2019) were estimated based on the estimated labor component of total construction cost and the timeline for each concurrent project (with the exception of the LAX Northside Area Development project, for which construction trip information was obtained from the traffic consultants involved in preparation of the traffic study for the LAX Northside Area Development EIR,[253] and the Landside Access Modernization Program Draft EIR)[254]. The cumulative development projects that were considered as part of this analysis and the estimated trips associated with these cumulative development projects are described in more detail below.

---

250 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) South Airfield Improvement Project, (SCH 2004081039), October 2005.

251 While additional cumulative projects such as the Landside Access Modernization Program (LAMP) are scheduled to occur during the cumulative peak month (November 2019), the timing of potential temporary roadway closures, if any, is unknown at the time of the analysis. Any roadway network modifications would be included in the CTMP and reviewed by LAWA prior to implementation. Due to the unknown timing of potential closures or improvements, it is reasonable to assume the roadway network remains constant from 2016 to 2019.

252 Congestion Management Program, Appendix D, Exhibit D-1, South Bay/LAX Area, 2010.

253 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update, Appendix E, Traffic Study, December 2014.

254 City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program, (SCH 2015021014), Appendix O, Off-Airport Traffic Study, September 2016.

Cumulative Traffic (November 2019) With Project

The project-related construction traffic volumes occurring during the peak cumulative period were added to the Cumulative Traffic (November 2019) "Without Project" traffic volumes described in the previous section. This is a traffic scenario that represents the estimated total peak hour traffic volumes (consisting of background traffic, traffic related to ambient growth, traffic related to other projects, and proposed project construction traffic) that would use the construction traffic study area intersections during the cumulative peak in November 2019. Similar to Baseline plus Project conditions, two traffic scenarios were developed under this condition, one each for the primary and optional primary construction staging area locations.

4.4.2.5 Determination of Impacts and Mitigation Measures

The following steps were conducted to calculate intersection levels of service, identify impacts, and identify mitigation measures for significant impacts. Detailed intersection level of service (LOS) and volume-to-capacity ratio (v/c) outputs are presented in Appendix D.3.

Analyze Intersection and Roadway Levels of Service - The levels of service of the construction traffic study area intersections and roadways were analyzed using TRAFFIX. Intersection LOS (v/c) was estimated using the CMA planning level methodology, as defined in Transportation Research Board Circular 212,[255] in accordance with LADOT's Traffic Study Policies and Procedures,[256] and the L.A. CEQA Thresholds Guide.[257] Intersection LOS (v/c) was analyzed for the following conditions:

- Baseline
- Baseline Plus Peak Project Traffic (Proposed Primary and Optional Primary Construction Staging Areas)
- Future Cumulative Traffic (November 2019) Without Project
- Future Cumulative Traffic (November 2019) With Project (Proposed Primary and Optional Primary Construction Staging Areas)

Identify Project Impacts - Project-related impacts associated with construction of the proposed project were identified for intersections that would be significantly affected by project-related traffic, consistent with the approach established in the LADOT Traffic Study Policies and Procedures guidelines. The thresholds described in Section 4.4.4 were used to determine impact significance. Project-related impacts and cumulative impacts were determined by comparing the LOS (v/c) results for the following:

- **Baseline Plus Peak Proposed Project Compared with Baseline:** This comparison is utilized to isolate the impacts of the proposed project, considering the use of either the proposed primary or optional primary construction staging area.
- **Cumulative Impacts:** Cumulative impacts were determined using a two-step process. Initially, the "Cumulative Traffic (November 2019) With Project" condition was compared to the baseline condition to determine if a significant cumulative impact would occur relative to baseline conditions. A cumulative impact was deemed significant if it would exceed the threshold of significance. If a cumulative impact was determined to be significant, then a second comparison of the "With Project" vs. the "Without Project" LOS (v/c) conditions was made to determine if the project's contribution to the significant cumulative impact is determined to be "cumulatively considerable" in accordance with the impact thresholds defined in Section 4.4.4 below. This comparison was used for both the proposed primary and optional primary construction staging areas.

Identify Mitigation Measures - Mitigation measures were identified for intersections determined to be significantly affected by construction-related traffic.

---

[255] Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.
[256] City of Los Angeles Department of Transportation, Traffic Study Policies and Procedures, August 2014.
[257] City of Los Angeles, L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles, 2006.

4.4.3 Existing Conditions

4.4.3.1 Regulatory Setting

The LADOT Traffic Study Policies and Procedures manual requires that a Traffic Study be prepared if the following criteria are met:

- A project is likely to add 500 or more daily trips
- A project is likely to add 43 or more a.m. or p.m. peak hour trips

Based on LADOT criteria, the proposed project would require a Traffic Study as each condition mentioned above would be met.

In addition, the LADOT Traffic Study Policies and Procedures manual provides Congestion Management Program (CMP) Guidelines to assist local agencies in evaluating impacts of land use projects on the CMP system through the preparation of a regional transportation impact analysis (TIA). A CMP TIA is necessary for all projects that include, at a minimum, the following:

- 50 or more trips added to intersections during either the weekday a.m. or p.m. peak hours
- 150 or more trips added to the freeway during either the weekday a.m. or p.m. peak hours

Because the proposed project would generate traffic during the a.m. or p.m. peak commute periods, the proposed project would meet or exceed the criteria set forth by Caltrans or LADOT. Therefore, a TIA would typically be required based on the conditions outlined above. During the scoping of the SAIP traffic study in 2004, LADOT indicated that no Traffic Study was required because there was "no requirement to assess the temporary traffic impacts of a project resulting from construction activities. So, the proposal to prepare a traffic study is voluntary."[258] Additionally, LADOT reiterated in January 2017 that it does not require traffic impact studies for traffic construction-related impacts.[259] LAWA determined at that time that the preparation of a Traffic Study is useful in order to provide a full assessment and documentation of the impacts generated by the construction of the proposed project.

4.4.3.2 Baseline Conditions

As indicated above, baseline conditions relate to the facilities and general conditions that existed during a typical weekday in 2016 for the hours of 7:00 a.m. to 8:00 a.m. and 4:00 p.m. to 5:00 p.m.

Construction Traffic Study Area

The construction traffic study area is depicted in **Figure 4.4-1**. The geographic scope of the construction traffic study area was determined by identifying the intersections most likely to be used by construction-related vehicles accessing (1) the proposed project construction site, construction employee parking areas, and delivery staging areas and (2) the construction employee parking and staging areas for other concurrent construction projects in the vicinity of LAX. The construction traffic study area is generally bounded by I-405 to the east, I-105 and Imperial Highway to the south, Pershing Drive to the west, and Westchester Parkway, Sepulveda Boulevard, and Howard Hughes Parkway to the north. **Figure 4.4-1** depicts the proposed project construction site, which is in the northern portion of the CTA, north of World Way.

It is assumed that the construction employee parking area is located in the area near the intersection of Century Boulevard and Avion Drive (i.e., Lot P1). Understanding that the availability of Lot P1 for project-related construction employee parking can change between now and when project construction occurs, the

---

258 Carranza, Tomas, City of Los Angeles Department of Transportation, email to Pat Tomcheck, Los Angeles World Airports, Subject: Re: FW: LAX Traffic Methodology Memo, July 29, 2004.

259 Ayala, Pedro, City of Los Angeles Department of Transportation, email to Pat Tomcheck, Los Angeles World Airports, Subject: Re: Traffic Impact Studies for Construction-Related Impacts, January 19, 2017.

project contractor may choose to utilize other parking lots in the nearby area; therefore, it is recognized that there are additional parking lots in the immediate area that offer project site access characteristics generally similar to those of Lot P1 (refer to Section 4.4.3.7 below for additional details). The material staging area is planned to be located either on an existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area); or on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area).

Traffic Study Area Roadways

The principal freeways and roadways serving as access routes within the construction traffic study area include the following:

- I-405 (San Diego Freeway) - This north-south freeway generally forms the eastern boundary of the construction traffic analysis traffic study area and provides regional access to the Airport and the surrounding area. Access to the traffic study area is provided via ramps at Howard Hughes Parkway, Century Boulevard, I-105, Imperial Highway, and three locations along La Cienega Boulevard.
- I-105 (Glenn M. Anderson or Century Freeway) - Along with Imperial Highway (described below), this east-west freeway forms the southern boundary of the construction traffic study area, and extends from the San Gabriel Freeway (I-605) on the east to Sepulveda Boulevard on the west. Access to the traffic study area is provided via ramps at Sepulveda Boulevard and along Imperial Highway. The westbound off-ramp from the I-105 Freeway to northbound Sepulveda Boulevard was widened to three lanes in March 2010.
- Aviation Boulevard - This north-south four-lane roadway bisects the traffic study area.
- Century Boulevard - This eight-lane divided roadway serves as the primary entry to the LAX CTA. This roadway also provides access to off-airport businesses and hotels and on-airport aviation-related facilities (e.g., air cargo facilities) located between the CTA and I-405.
- Imperial Highway - This east-west roadway is located at-grade and beneath much of the elevated I-105 freeway. The number of lanes on this roadway varies from six-lanes east of the merge with I-105 to four-lanes west of the merge with I-105.
- La Cienega Boulevard - This north-south roadway parallels I-405 at the eastern boundary of the traffic study area. The roadway varies from four to six lanes.
- Pershing Drive - This north-south four-lane divided roadway forms the western boundary of the construction traffic study area.
- Westchester Parkway - This east-west four-lane divided arterial roadway forms a portion of the northern boundary of the traffic study area.
- Sepulveda Boulevard (State Route 1 south of Lincoln Boulevard) - This major north-south six-lane arterial roadway provides direct access to the Airport via I-405 and Westchester Parkway on the north and via I-105 on the south. Sepulveda Boulevard between I-105 and Century Boulevard is located in a tunnel section beneath the south airfield runways.
- 111th Street - This east-west roadway has one lane in each direction separated by a continuous two-way left turn lane.

4.4.3.3 Existing Traffic Conditions

Traffic conditions at the construction traffic study area intersections and existing traffic activity (peak month, hourly, and annual) are discussed below.

Traffic Study Area Intersections

Intersection locations and intersection control and geometry are discussed below.

Intersection Locations

The routes likely to be utilized by construction-related vehicles were reviewed to identify the intersections likely to be used by vehicles accessing the construction employee parking/staging sites associated with the proposed project or the other concurrent construction project sites in the vicinity of LAX. Based on this review, the key intersections to be analyzed are listed below in **Table 4.4-1** and depicted on **Figure 4.4-2**.

Table 4.4-1
Study Area Intersections

Intersection Number	Intersection Location
1.	Aviation Boulevard and Century Boulevard
2.	Imperial Highway and Aviation Boulevard
3.	Aviation Boulevard and 111th Street
4.	La Cienega Boulevard and Century Boulevard
5.	Sepulveda Boulevard and Century Boulevard
6.	Century Boulevard and I-405 Northbound Ramps East of La Cienega Boulevard
7.	Imperial Highway and Douglas Street
8.	Sepulveda Boulevard and Howard Hughes Parkway
9.	Imperial Highway and La Cienega Boulevard
10.	Imperial Highway and Main Street
11.	Imperial Highway and Pershing Drive
12.	Imperial Highway and Sepulveda Boulevard
13.	Imperial Highway and Nash Street
14.	Imperial Highway and I-105 Ramp
15.	Imperial Highway and I-405 Northbound Ramp
16.	La Cienega Boulevard and Lennox Boulevard
17.	La Cienega Boulevard and 111th Street
18.	La Cienega Boulevard and I-405 Southbound Ramps North of Century Boulevard
19.	La Cienega Boulevard and I-405 Southbound Ramps South of Century Boulevard
20.	La Cienega Boulevard and I-405 Southbound Ramps North of Imperial Highway
21.	Sepulveda Boulevard and La Tijera Boulevard
22.	Sepulveda Boulevard and Lincoln Boulevard
23.	Sepulveda Boulevard and Manchester Avenue
24.	Westchester Parkway and Pershing Drive
25.	Sepulveda Boulevard and Westchester Parkway
26.	Sepulveda Boulevard and 76th/77th Street
27.	Sepulveda Boulevard and 79th/80th Street
28.	Sepulveda Boulevard and 83rd Street
29.	La Cienega Boulevard and 104th Street
Source: Los Angeles World Airports, September 2014. Prepared By: Ricondo & Associates, Inc., January 2017.	

Intersection Control and Geometry

All of the construction traffic study area intersections listed in **Table 4.4-1** and depicted in **Figure 4.4-2** are signalized. In addition, all of the intersections are included in LADOT's Automated Traffic Surveillance and Control (ATSAC) system, except Imperial Highway and the I-405 northbound ramps east of La Cienega Boulevard (Intersection #15) and Century Boulevard and the I-405 northbound ramps east of La Cienega Boulevard (Intersection #6). The ATSAC system provides for monitoring of intersection traffic conditions and the flexibility to adjust traffic signal timing in response to current conditions. Study area intersection geometries are provided in Appendix D.1.

Peak Hours

The hours of analysis were chosen based on those which have available baseline traffic volumes for all intersections in the construction traffic study area, and for those hours at the start of the commuter peak periods. Using this criterion, the hours analyzed for the proposed project were:

- **AM Peak Hour (7:00 a.m. to 8:00 a.m.)** - The proposed project a.m. peak hour represents a period for construction employees exiting the employee parking lot following an overnight shift. Additionally, material delivery trips (from external to staging area and staging area to project site) and employee shuttles were assumed to occur during the same hour. This approach provides a conservative impact analysis by addressing situations when complete avoidance of the morning commuter peak period is not possible.
- **PM Peak Hour (4:00 p.m. to 5:00 p.m.)** - The proposed project p.m. peak hour represents a period for material delivery trucks accessing/egressing the staging area. The construction traffic analysis assumed that no employee trips would be on the roadways at this time, as employees have either arrived or departed the staging lot prior to 4:00 p.m. (i.e., the timing of the afternoon shift [3:00 p.m. to 11:00 p.m.] requires all employees to be on-site prior to the 4:00 p.m. to 5:00 p.m. hour). This approach provides a conservative impact analysis by addressing situations when complete avoidance of the evening commuter peak period is not possible.

4.4.3.4 Baseline Intersection Volumes

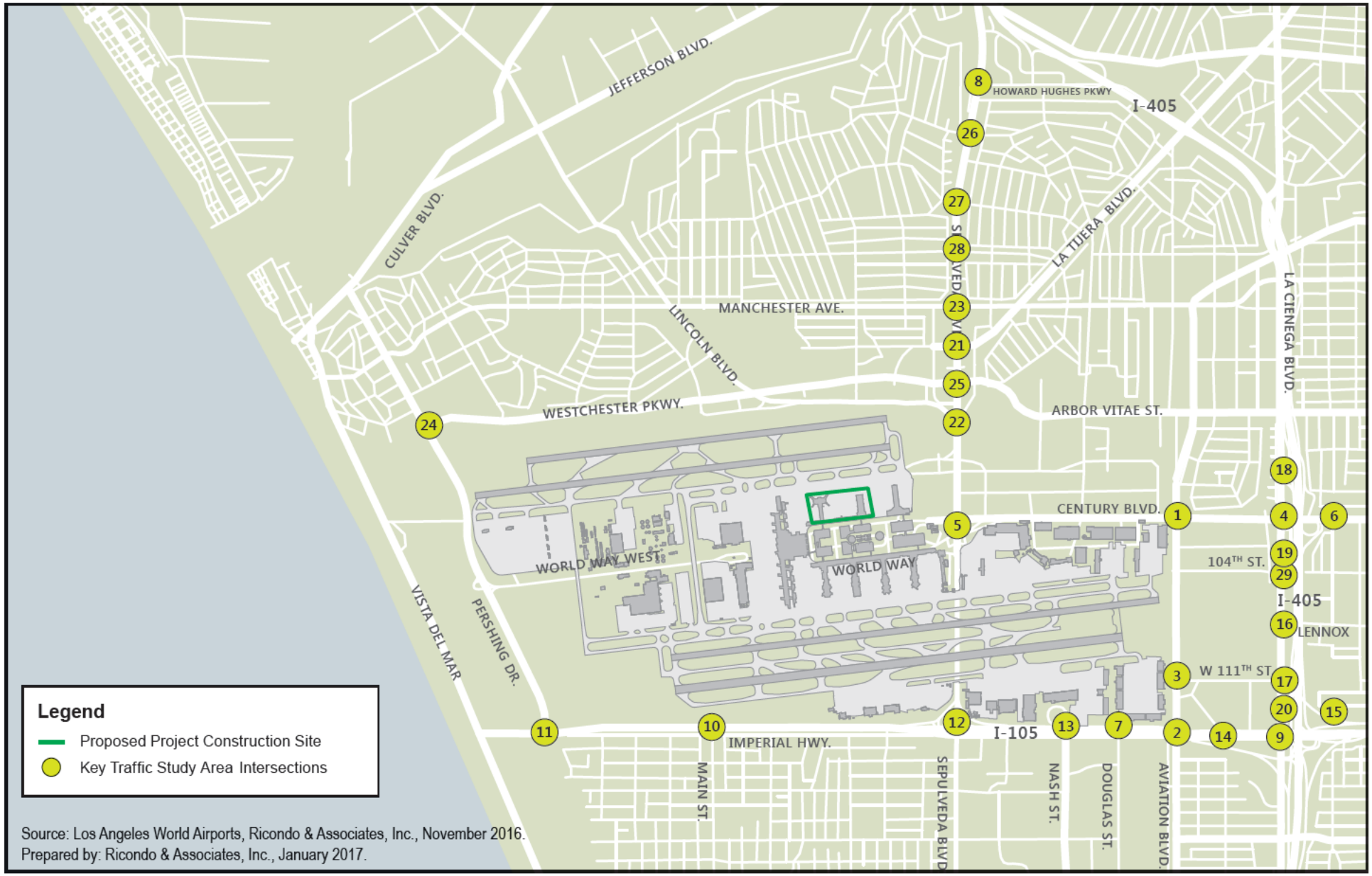
Baseline traffic volumes consist of the traffic volumes that represent traffic activity at the time of the analysis (November 2016). Baseline volumes are based on actual data collected during the a.m. and p.m. peak hours from 2013 to 2015, adjusted to 2016 based on review of LAX driveway and CTA traffic count data. Baseline intersection traffic volumes are provided in Appendix D.2.

4.4.3.5 Baseline Intersection Analyses

Intersection LOS (v/c) was analyzed using the CMA methodology to assess the estimated operating conditions during baseline conditions for the a.m. and p.m. peak hours. This method, also known as the Circular 212 Planning Method, calculates the sum of the per-lane volumes for the critical movements and divides by an overall intersection capacity (volume-to-capacity ratio). LOS is a qualitative measure that describes traffic operating conditions (e.g., delay, queue lengths, congestion). Intersection LOS ranges from A (i.e., excellent conditions with little or no vehicle delay) to F (i.e., excessive vehicle delays and queue lengths). LOS definitions for the CMA methodology are presented in **Table 4.4-2**.

In accordance with LADOT analysis procedures, the volume/capacity (v/c) ratio was calculated using the CMA methodology is further reduced by 0.07 for those intersections included within the ATSAC system to account for the improved operation and increased efficiency from the ATSAC system that is not captured as part of the CMA methodology. Application of the ATSAC reduction is described in Attachment D of the LADOT Traffic Study Policies and Procedures.[260]

[260] City of Los Angeles Department of Transportation, Traffic Study Policies and Procedures, August 2014.



Terminals 2 and 3 Modernization Project

Construction Traffic Study Area Intersections

Figure
4.4-2

Table 4.4-2
Level of Service Thresholds and Definitions for Signalized Intersections

Level of Service (LOS)	Volume/Capacity Ratio Threshold	Definition
A	0.000 - 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	0.601 - 0.700	VERY GOOD. An occasional approach phase is fully used; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 - 0.800	GOOD. Occasionally, drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 - 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 - 1.000	POOR. Represents the most vehicles that intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	Greater than - 1.000	FAILURE. Backups from nearby intersections or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.
Source: Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.		
Prepared By: Ricondo & Associates, Inc., January 2017.		

The estimated intersection LOS (v/c) for baseline conditions is provided in **Table 4.4-3**. As shown in **Table 4.4-3**, 16 of the 29 intersections operated at LOS C or better during the baseline a.m. and p.m. peak periods analyzed for the proposed project. The following intersections were estimated to be operating at LOS D or worse during the baseline a.m. or p.m. peak periods:

- Aviation Boulevard and Century Boulevard (Intersection #1) – LOS D p.m. peak hour
- La Cienega Boulevard and Century Boulevard (Intersection #4) – LOS D a.m. and p.m. peak hours
- Century Boulevard and Sepulveda Boulevard (Intersection #5) – LOS D a.m. peak hour
- Century Boulevard and I-405 Northbound Ramp (Intersection #6) – LOS E a.m. peak hour
- Imperial Highway and Sepulveda Boulevard (Intersection #12) – LOS E a.m. peak hour and LOS F p.m. peak hour
- Imperial Highway and I-105 Ramp (Intersection #14) – LOS D a.m. peak hour
- Imperial Highway and I-405 Northbound Ramp (Intersection #15) – LOS D p.m. peak hour
- La Cienega Boulevard and I-405 Southbound Ramp (Intersection #18) – LOS E a.m. peak hour
- Sepulveda Boulevard and La Tijera Boulevard (Intersection #21) – LOS D p.m. peak hour
- Sepulveda Boulevard and Lincoln Boulevard (Intersection #22) – LOS E p.m. peak hour
- Sepulveda Boulevard and Manchester Avenue (Intersection #23) – LOS D a.m. and p.m. peak hours
- Sepulveda Boulevard and Westchester Parkway (Intersection #25) – LOS D a.m. and p.m. peak hours
- Sepulveda Boulevard and 76th / 77th Street (Intersection #26) – LOS E a.m. peak hour

The LOS (v/c) results from the TRAFFIX program, including the volume, geometry and other inputs used to produce these results are provided in Appendix D.3.

Table 4.4-3
Baseline Intersection Analysis Results

Intersection		Peak Hour [1]	V/C [2]	LOS [3]
1.	Aviation Blvd. & Century Blvd.	AM Peak Hour	0.598	A
		PM Peak Hour	0.826	D
2.	Imperial Hwy. & Aviation Blvd.	AM Peak Hour	0.712	C
		PM Peak Hour	0.650	B
3.	Aviation Blvd. & 111th St.	AM Peak Hour	0.540	A
		PM Peak Hour	0.478	A
4.	La Cienega Blvd. & Century Blvd.	AM Peak Hour	0.817	D
		PM Peak Hour	0.899	D
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.824	D
		PM Peak Hour	0.725	C
6.	Century Blvd. & I-405 N/B Ramp	AM Peak Hour	0.924	E
		PM Peak Hour	0.676	B
7.	Imperial Hwy. & Douglas St.	AM Peak Hour	0.393	A
		PM Peak Hour	0.623	B
8.	Sepulveda Blvd. & H. Hughes Pkwy.	AM Peak Hour	0.671	B
		PM Peak Hour	0.651	B
9.	Imperial Hwy. & La Cienega Blvd.	AM Peak Hour	0.474	A
		PM Peak Hour	0.698	B
10.	Imperial Hwy. & Main St.	AM Peak Hour	0.616	B
		PM Peak Hour	0.624	B
11.	Imperial Hwy. & Pershing Dr.	AM Peak Hour	0.429	A
		PM Peak Hour	0.498	A
12.	Imperial Hwy. & Sepulveda Blvd.	AM Peak Hour	0.934	E
		PM Peak Hour	1.323	F
13.	Imperial Hwy. & Nash St.	AM Peak Hour	0.614	B
		PM Peak Hour	0.383	A
14.	Imperial Hwy. & I-105 Ramp	AM Peak Hour	0.811	D
		PM Peak Hour	0.556	A
15.	Imperial Hwy. & I-405 NB Ramp	AM Peak Hour	0.597	A
		PM Peak Hour	0.832	D
16.	La Cienega Blvd. & Lennox Blvd.	AM Peak Hour	0.553	A
		PM Peak Hour	0.530	A
17.	La Cienega Blvd. & 111th St.	AM Peak Hour	0.360	A
		PM Peak Hour	0.301	A
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.904	E
		PM Peak Hour	0.754	C
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.449	A
		PM Peak Hour	0.351	A
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.507	A
		PM Peak Hour	0.291	A
21.	Sepulveda Blvd. & La Tijera Blvd.	AM Peak Hour	0.692	B
		PM Peak Hour	0.819	D
22.	Sepulveda Blvd. & Lincoln Blvd.	AM Peak Hour	0.780	C
		PM Peak Hour	0.964	E
23.	Sepulveda Blvd. & Manchester Ave.	AM Peak Hour	0.865	D
		PM Peak Hour	0.885	D
24.	Westchester Pkwy. & Pershing Dr.	AM Peak Hour	0.473	A

Table 4.4-3
Baseline Intersection Analysis Results

Intersection		Peak Hour [1]	V/C [2]	LOS [3]
		PM Peak Hour	0.286	A
25.	Sepulveda Blvd. & Westchester Pkwy.	AM Peak Hour	0.863	D
		PM Peak Hour	0.893	D
26.	Sepulveda Blvd. & 76th/77th St.	AM Peak Hour	0.915	E
		PM Peak Hour	0.487	A
27.	Sepulveda Blvd. & 79th/80th St.	AM Peak Hour	0.780	C
		PM Peak Hour	0.504	A
28.	Sepulveda Blvd. & 83rd St.	AM Peak Hour	0.643	B
		PM Peak Hour	0.457	A
29.	La Cienega Blvd. & 104th St.	AM Peak Hour	0.375	A
		PM Peak Hour	0.407	A

Notes:
[1] The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.) and the p.m. peak (4:00 p.m. - 5:00 p.m.).
[2] Volume to capacity ratio.
[3] LOS range: A (excellent) to F (failure).
SOURCE: Appendix D.3 of this EIR.
Prepared By: Ricondo & Associates, Inc., January 2017.

4.4.3.6 LAWA's Coordination and Logistic Management Team

Subsequent to the approval of the LAX Master Plan, LAWA established the Coordination and Logistic Management (CALM) Team. Working in cooperation with LAWA staff including Terminal Operations, Airport Police, Environmental Planning Group, and Commercial Development Group, the CALM Team monitors construction traffic, coordinates lane and roadway closures and analyzes traffic conditions to determine the need for additional traffic controls, lane restriping, and traffic signal modifications. An approval process for proposed construction work has been established in which contractors submit request forms describing the work, when the work is proposed to take place, duration, coordination efforts with other projects, etc. If pedestrian or vehicular traffic will be impacted, the submittal form will include proposed traffic control plans. These requests are reviewed by staff from the CALM Team and various LAWA divisions, and any concerns are addressed prior to approval. The CALM Team also develops an informational campaign for construction activities, including wayfinding signage for pedestrians to locate ground transportation facilities and parking during construction, information for commercial shuttle drivers regarding lane closures and detours, and traffic alerts on LAWA's website for the public and airport employees. A color-coded, real-time traffic conditions map for the LAX CTA is included on the LAWA website. Weekly meetings occur to discuss minimizing the construction impacts of current and future projects. Coordination with outside agencies is conducted as the individual projects necessitate.

4.4.3.7 Project-Generated Traffic

Traffic that would be generated by the proposed project is defined below for peak period of traffic generation.

Project Construction Traffic During Project Peak (March 2020)

The peak construction period for the proposed project would likely occur during March 2020. Construction employee and truck trips were estimated on an hourly basis over the typical busy day, which coincides with the peak period of construction, and therefore, construction employment. It is likely that this would occur over several days, or weeks, as construction of the proposed project is at its peak.

Workforce levels at peak construction were based on a review of the proposed project construction estimates, which also included specific construction elements and employees per shift. It is estimated that 550 construction employees would access the proposed project construction site on a daily basis during the peak period of construction. The construction schedule is based on a triple-shift work schedule with shift times occurring from 7:00 a.m. to 3:00 p.m., 3:00 p.m. to 11:00 p.m., and 11:00 p.m. to 7:00 a.m. It is estimated that a 3rd shift (overnight) would only be required periodically. A total of 180 construction employees were estimated to work in each of the morning and afternoon shifts, with the balance of construction employees (190) working the overnight shift.

Based on the construction schedule described above, employees were estimated to be entering the site between 6:00 a.m. to 7:00 a.m., 2:00 p.m. to 3:00 p.m., and 10:00 p.m. to 11:00 p.m. Conversely, employees were estimated to be exiting the site between 7:00 a.m. to 8:00 a.m., 3:00 p.m. to 4:00 p.m., and 11:00 p.m. to 12:00 a.m. Vehicle occupancy was assumed to be 1.15 employees per vehicle. According to a study published by the Southern California Association of Governments (SCAG), the average vehicle occupancy on several regional roadways in the Los Angeles region ranged from approximately 1.15 to 1.30.[261] Provided the temporary nature of construction employment and the lower likelihood of rideshare opportunities, a conservative estimate of vehicle occupancy of 1.15 employees per vehicle was assumed. By applying the assumed vehicle occupancy factor, it was projected that 479 construction employee vehicles per day during the proposed project construction peak period would access and egress the construction traffic study area in support of proposed project construction.

For purposes of the intersection analyses, all vehicle trips were converted to "passenger car equivalents" (PCEs) to account for the additional impact that large vehicles, such as trucks, would have on roadway traffic operations. As such, the number of construction-related vehicle trips was multiplied by the following PCE factors, consistent with the assumptions in previous LAX construction projects:

Vehicle Type	PCE Factor
Construction employees[262]	1.0
Construction delivery trucks	2.5
Employee shuttle buses	2.0

The construction schedule was reviewed to determine the specific construction elements occurring during the Project peak month of March 2020. For the purposes of the construction traffic impact analysis, employees working on the proposed project were assumed to park at the lot located southeast of the intersection of Century Boulevard and Avion Drive (i.e., Lot P1, which is known as LAX Parking Lot F located 6075 West Century Boulevard). This parking lot, identified as area P1 in Figure 4.4-5, is located in the general vicinity of the project site with direct access to and from the site provided via Century Boulevard and World Way. Construction employees would be shuttled to their respective construction site by way of shuttle bus. The number of shuttle buses required to transport the construction employees was estimated based on an assumed ratio of 30 passengers per bus. Understanding that the availability of Lot P1 for project-related construction employee parking can change between now and when project construction occurs, as the subject area can also be used for airport public parking or airport employee parking, or the project contractor may choose to utilize other parking lots in the nearby area, it is recognized that there are additional parking lots in the immediate area that offer project site access characteristics generally similar to those of Lot P1. Such additional parking lots are depicted in Figure 4.4-5 and include, but are not limited to, the following sites:

---

261 Southern California Association of Governments, Regional High-Occupancy Vehicle Lane System Performance Study, November 4, 2004.

262 It should be noted that a different conversion factor was applied to determine the number of construction employee vehicles that would access the proposed project area. A vehicle occupancy factor of 1.15 employees per vehicle was used to convert from employees to vehicles. This conversion factor is different than the PCE factor discussed here, which is used to adjust for the additional impact that large vehicles have on roadway traffic operations.

Lot ID	Lot Name	Address
P1a	Joe's Parking	6141 W. Century Boulevard
P1b	QuikPark LAX	9821 Vicksburg Avenue
P1c	Sunrise LAX Parking	6155 W. 98th Street
P1d	LAX Lot C	96th Street/Sepulveda Boulevard
P1e	Park Air Express	5757 W. Century Boulevard

Given these additional parking lots' proximity to Lot P1, construction employee commute patterns to and from those lots would likely be generally similar to those of Lot P1 and therefore, the impacts to the local roadway network and intersections would also be similar.

Delivery trucks carrying construction equipment and material would enter and exit the materials staging area located either on an existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area); or on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area). A maximum of 68 haul truck trips per day was estimated during the Project peak (March 2020). Using an assumed PCE factor of 2.5 per vehicle and distributing these volumes (72 daily trips) in accordance with the likely delivery schedule (over 12 hours), it was estimated that a total of 15 PCEs (72 divided by 12, multiplied by 2.5) would enter and exit the study area during the a.m. and p.m. peak periods.

The estimated project-related construction trips (in PCEs) during the proposed project construction peak in March 2020 are summarized by hour in **Table 4.4-4**. The table includes construction employee vehicle trips, employee shuttle trips, and construction delivery truck trips used to transfer goods to and from the construction staging area(s).

Table 4.4-4
Project Peak (March 2020) – Proposed Project-Related Construction Traffic PCEs

		Employee [1]		Truck [2]		Employee Shuttles [3]		
Hour		Trips In	Trips Out	Trips In	Trips Out	Trips In	Trips Out	Total Construction PCEs
0:00	1:00	-	-	-	-	-	-	-
1:00	2:00	-	-	-	-	-	-	-
2:00	3:00	-	-	-	-	-	-	-
3:00	4:00	-	-	-	-	-	-	-
4:00	5:00	-	-	-	-	-	-	-
5:00	6:00	-	-	-	-	-	-	-
6:00	7:00	157	-	15	15	12	12	211
7:00	**8:00**	**-**	**165**	**15**	**15**	**14**	**14**	**223**
8:00	9:00	-	-	15	15	-	-	30
9:00	10:00	-	-	15	15	-	-	30
10:00	11:00	-	-	15	15	-	-	30
11:00	12:00	-	-	15	15	-	-	30
12:00	13:00	-	-	15	15	-	-	30
13:00	14:00	-	-	15	15	-	-	30
14:00	15:00	157	-	15	15	12	12	211
15:00	16:00	-	157	15	15	12	12	211
16:00	**17:00**	**-**	-	**15**	**15**	**-**	**-**	**30**
17:00	18:00	-	-	15	15	-	-	30
18:00	19:00	-	-	-	-	-	-	-
19:00	20:00	-	-	-	-	-	-	-
20:00	21:00	-	-	-	-	-	-	-
21:00	22:00	-	-	-	-	-	-	-

Table 4.4-4
Project Peak (March 2020) – Proposed Project-Related Construction Traffic PCEs

Hour		Employee [1] Trips In	Employee [1] Trips Out	Truck [2] Trips In	Truck [2] Trips Out	Employee Shuttles [3] Trips In	Employee Shuttles [3] Trips Out	Total Construction PCEs
22:00	23:00	165	-	-	-	14	14	193
23:00	0:00	-	157	-	-	12	12	181-
Total		**479**	**479**	**180**	**180**	**76**	**76**	**1,470**
Summary of Modeled Traffic PCEs								
Construction AM (7:00 AM– 8:00 AM)		-	165	15	15	14	14	223
Construction PM (4:00 PM – 5:00 PM)		-	-	15	15	-	-	30

Notes:
[1] Estimate is based on 550 peak day construction employees. An occupancy factor of 1.15 employees per vehicle is included in the employee trip calculations.
[2] Truck trips (i.e., haul trucks) were converted at a rate of 2.5 PCEs per vehicle. Delivery trucks are planned to be located on an existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area); or on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area). Additionally, the analysis assumes 100 percent of the construction staging would occur at either the proposed primary or optional primary construction staging areas (i.e., no combination of the two lots was included in the analysis).
[3] Employee shuttles were converted at a rate of 2.0 PCEs per vehicle. Shuttle occupancy was assumed to be 30 passengers per vehicle.
Source: CDM Smith (employee trip volumes, truck trips, vehicle schedule times) July 2016.
Prepared By: Ricondo & Associates, Inc., January 2017.

Proposed Project Construction Trip Distribution

The locations of the proposed project construction site, construction employee parking area, delivery staging area(s), and other relevant features are depicted in **Figure 4.4-1 and Figure 4.4-3**. As shown in **Figure 4.4-3**, trucks would use the regional freeway system (I-405 and I-105), Imperial Highway, and La Cienega Boulevard to access the proposed primary construction staging area; or the regional freeway system (I-405 and I-105), Imperial Highway, Pershing Drive, and Westchester Parkway to access the optional primary construction staging area. The regional and local traffic flow distributions are also provided in **Figure 4.4-3**.

For purposes of distributing traffic on the construction traffic study area roadway network, it was assumed that construction employee trips would originate from geographic locations in proportion to the distribution of regional population, and specific street routing assumptions would be generally consistent with those of other previous LAX construction projects and data within the LAX Air Passenger Survey.[263] LAWA conducts airline passenger surveys on a regular basis to determine airline passenger travel characteristics and to assess changes in these travel patterns over time. Based on a review of the 2015 Air Passenger Survey Data, the most recent survey available at the Airport, it was determined that the regional travel and access patterns have not materially changed from the data obtained in 2011. For example, the 2015 Air Passenger Survey shows that the distribution of passengers accessing LAX from the major freeways is within three percentage points of those determined in 2011. Therefore, the distribution pattern assumptions used to distribute construction employee trips on the traffic study area network remain unchanged from those used in previous LAX project EIRs. As shown in **Figure 4.4-3**, it was estimated that approximately 21 percent of

263 Unison Consulting, Inc., Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings, February 2016.

the construction-related employee traffic would access the Airport from I-405 North, 23 percent from I-405 South, 32 percent from I-105 East, and 24 percent from local roadways. These route characteristics represent the roadways that a construction-related vehicle would use to access the traffic study area.

In assigning traffic to the construction traffic study area roadways, it was assumed that construction employee vehicles would approach the construction traffic study area in proportion to the regional population distributions described above. Truck traffic, however, is proposed to be limited to accessing the staging area(s) during construction via the regional freeway system (I-405 and I-105), Imperial Highway, Aviation Boulevard, Century Boulevard, La Cienega Boulevard, Pershing Drive, and Westchester Parkway. The freeway ramps, roadways, and intersections representing the travel paths for construction-related vehicles within the construction traffic study area were determined by reviewing the likely paths that would be used by vehicles traveling to the employee parking lots and to the construction staging areas, and assigning those trips to the most logical routes. The traffic study area circulation routes for construction employees and trucks are described in Appendix D.4.

4.4.3.8 Future Cumulative Traffic

The components of traffic for the future cumulative traffic condition are described in this section. The future cumulative traffic condition takes into consideration past, present, and reasonably foreseeable probable future projects, as identified in Table 3-1 and shown on Figure 3-1 in Chapter 3, *Overview of Project Setting*. In addition, baseline traffic volumes were multiplied by a growth factor of two percent per year to account for local background traffic growth through 2019. This background growth accounts for probable projects within the general vicinity of LAX area such as those indicated in Table 3-2; see Chapter 4, *Environmental Impact Analysis* (Description of Cumulative Impacts) for further details. The list of cumulative development projects is constantly changing as projects rotate off the list and new projects are approved and added to the list. Given that approval, construction, and operation of local area development projects is a continuous process, the traffic associated with the construction and operation of many past and current local area developments were likely present during the latest intersection counts, and therefore were likely represented in the traffic volume data used as a basis for the traffic study.

Cumulative Projects

Development projects considered in the cumulative impact analysis include LAX Master Plan projects as well as other capital improvement projects undertaken by LAWA and other local agencies. Based on information available at the time the construction traffic analysis for the proposed project was prepared, the development projects forecasted to be under construction concurrent with the proposed project construction (October 2017 through December 2023) and of a nature that would contribute to cumulative traffic impacts were identified.

Table 4.4-5 summarizes the estimated construction costs, and the assumed start and end dates of construction for the proposed project and each of the cumulative projects that are forecasted to be under construction concurrent with the proposed project; this list of probable future projects is shorter than the lists presented in Table 3-1 in Chapter 3, *Overview of Project Setting*, because it only includes projects that would be under construction concurrent with the proposed project construction. The estimated labor component of the total construction cost is a key element associated with estimating construction employee hours and resulting employee vehicle trips.

Source: Los Angeles World Airports, Ricondo & Associates, Inc., November 2016.
Prepared by: Ricondo & Associates, Inc., January 2017.

Terminals 2 and 3 Modernization Project

Proposed Project Construction Vehicle Routes & Trip Distribution

Figure
4.4-3

Table 4.4-5
Construction Projects Concurrent with the Proposed Project Construction Period

Concurrent Construction Project	Estimated Total Construction Cost (Millions)	Start Date	End Date	Estimated Total Construction Employee Hours (Total)
Terminals 2 and 3 Modernization Program (proposed project)	$1,400	Oct-17	Dec-23	3,138,000
Midfield Satellite Concourse North	$1,098	Apr-15	Nov-19	5,732,000
Terminal 1.5	$750	Jun-17	Jul-19	1,681,000
Terminal 1 Improvements	$375	Aug-14	Dec-18	840,000
Runway 7R-25L Rehabilitation	$200	Sep-17	Dec-18	336,000
West Aircraft Maintenance Area Project	$67.3	Aug-14	Jan-18	425,000
Miscellaneous Projects/Improvements	$945.5	Jan-14	Jul-20	530,000
LAX Northside Development [1]	N/A[1/]	Apr-16	Jun-25	N/A[1]
Terminal 3 (T3) Connector	$175	Oct-17	Sep-19	393,000
Airport Metro Connector (AMC) 96th Street Transit Station[2]	$619	Jan-20	Jan-23	1,040,000
Airport Security Buildings	$75	Jan-19	Jan-21	126,000
South Terminals Improvements	$660	Nov-11	Dec-18	1,479,000
Argo Drain Sub-Basin Stormwater Infiltration and Treatment Facility	$7.5	Mar-17	Apr-19	17,000
Canine Facility	$10	Jan-18	Jan-19	23,000
Secured Area Access Post (SAAP) Project	$4	Oct-17	Apr-20	9,000
Landside Access Modernization Program [3]	$5,500	Oct-17	Dec-35	13,100,000
Concourse 0	$1,500	Apr-19	Mar-23	3,362,000
MSC South Project	$1,000	Jan-20	Jan-25	2,242,000
Terminal 2 Improvements	$176	Jan-14	Jan-18	395,000
North Airfield Improvements	$200	July-19	Dec-25	336,000
Runway 7L-25R RSA South	$116.9	May-16	Nov-17	300,000
LAX Bradley West Project	$525	Nov-13	Nov-17	1,177,000

Notes:

[1] Construction traffic estimates based on monthly construction activity estimates provided by Gibson Transportation Consulting, Inc..

[2] Estimated budget and schedule for the Airport Metro Connector: 96th Street Transit Station construction traffic based on information obtained from Crenshaw/LAX Transit Corridor Project Final EIR and project website.

[3] Construction traffic estimates provided by Connico Incorporated.

Source: LAWA; CDM Smith; Connico Incorporated, March 2016; Ricondo & Associates, Inc., July 2016; Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor Project Final Environmental Impact Report/Environmental Impact Statement, Chapter 3, Transportation Impacts of the Alignment and Stations, Section 4.15, Construction Impacts, and Chapter 8, Financial Analysis and Comparison of Alternatives (Metro Crenshaw/LAX Transit Corridor cost), August 2011, Available: https://www.metro.net/projects/crenshaw_corridor.com (Metro Crenshaw/LAX Transit Corridor schedule), accessed January 12, 2017.

Prepared By: Ricondo & Associates, Inc., January 2017.

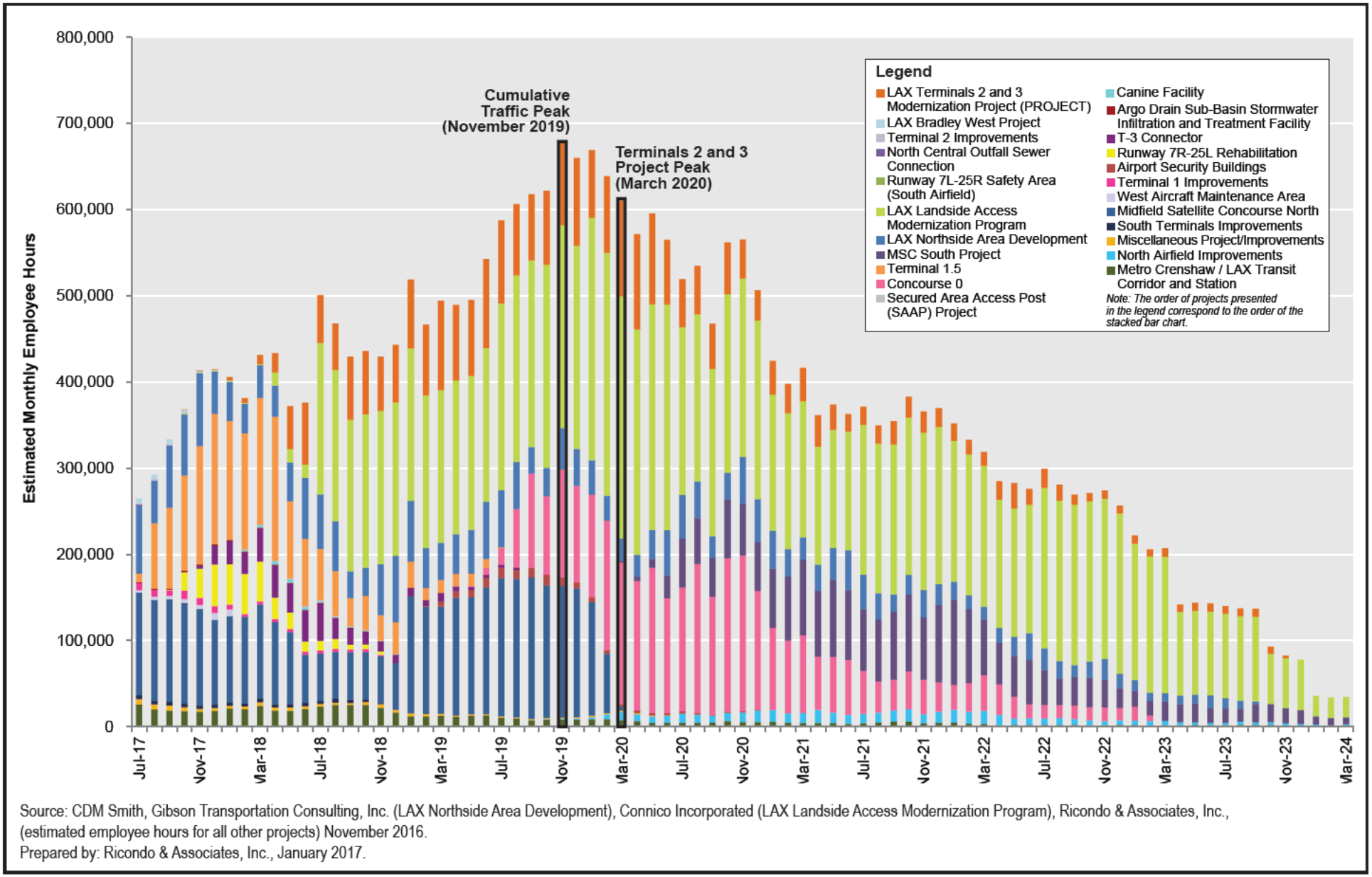
The activity characteristics of the resource loaded schedule (monthly employee hours, shift times, etc.) and associated construction-related vehicle trip activity developed for the Bradley West Project, in addition to other LAWA construction projects, was used to estimate the construction activity associated with the other concurrent projects for which detailed construction-related trip data were not available. Specifically, the ratio of total construction employee hours to total labor cost was calculated for the Bradley West Project, CUP-RP, WAMA, and MSC. A weighted average of this ratio was applied to the estimated labor costs associated with the other cumulative projects to provide an estimate of total employee hours required over the course of each of these other projects. In addition, the general distribution of employee hours over the course of the Bradley West Project construction program was used to allocate total employee hours over

the course of the individual projects on a monthly basis. This methodology was considered appropriate for this analysis as the Bradley West Project provided detailed information related to construction activity, costs, and associated vehicle trip activity, and provided detailed information related to the primary variables involved with determining labor schedules (i.e. project costs and timeline). Although it is likely that the other cumulative projects may experience different peaking patterns, the profile of the monthly distribution of employee hours over the course of the Bradley West Project provides a model profile calculated based on a comprehensive resource loaded schedule, which would provide a realistic surrogate for use in estimating activity from other cumulative projects for which detailed construction data are not available.

This approach was used to estimate construction employee hours and vehicle trips associated with all concurrent projects with the exception of the LAX Northside Area Development project for which construction trip information and monthly construction employee hour data were obtained from the traffic consultants involved in preparation of the traffic study for the LAX Northside Area Development EIR. Additionally, construction employee hours and vehicle trips associated with the MSC North, West Maintenance Area, Landside Access Modernization Program, and Terminal 1.5 Project were obtained based on detailed construction-related trip projections from the technical analyses prepared as part of their respective EIRs/Initial Studies.

Figure 4.4-4 provides estimated employee hours by month for the proposed project and the cumulative construction projects that are forecasted to be under construction concurrent with the proposed project construction period. The figure includes all construction projects that are forecasted to occur over the course of the construction period for the proposed project. As shown in the figure, the peak period for proposed project construction is estimated to occur in March 2020, while the overall cumulative peak during construction of the proposed project is estimated to occur in November 2019.

Estimated a.m. and p.m. peak hour vehicle trips associated with the proposed project and the eight concurrent construction projects during November 2019 (cumulative peak period) are provided in **Table 4.4-6**. Traffic volumes associated with the proposed project during the peak period for cumulative traffic (November 2019) were estimated based on a review of the proposed project construction schedule. As a result, project employee traffic during the peak cumulative period (November 2019) would be about 86 percent of the employee traffic activity that would occur during the peak month for the project (March 2020).



Source: CDM Smith, Gibson Transportation Consulting, Inc. (LAX Northside Area Development), Connico Incorporated (LAX Landside Access Modernization Program), Ricondo & Associates, Inc., (estimated employee hours for all other projects) November 2016.
Prepared by: Ricondo & Associates, Inc., January 2017.

Terminals 2 and 3 Modernization Project	Estimated Employee Hours for Proposed Project and Other Concurrent Construction Projects	Figure 4.4-4

Table 4.4-6
Construction Project Trips Concurrent with the Proposed Project Construction Period

Project	Construction Trips in Passenger Car Equivalents (PCEs)											
	AM Peak Hour (7:00 AM - 8:00 AM)						PM Peak Hour (4:00 PM - 5:00 PM)					
	Employees [2]		Trucks [3]		Shuttles [4]		Employees [2]		Trucks [3]		Shuttles [4]	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Proposed Project (November 2019) [1, 10]	--	142	13	13	12	12	--	--	13	13	-- [9]	-- [9]
Other Concurrent Projects in November 2019 [5,6]												
Midfield Satellite Concourse North [7]	353	--	92	92	-- [9]	-- [9]	83	353	92	92	-- [9]	-- [9]
Miscellaneous Projects/Improvements	4	--	1	1	-- [9]	-- [9]	--	4	1	1	-- [9]	-- [9]
LAX Northside Area Development [8]	234	--	--	--	-- [9]	-- [9]	--	234	--	--	-- [9]	-- [9]
Airport Metro Connector (AMC) 96th Street Transit Station	25	--	5	5	-- [9]	-- [9]	--	25	5	5	-- [9]	-- [9]
Airport Security Buildings	32	--	6	6	-- [9]	-- [9]	--	32	6	6	-- [9]	-- [9]
Landside Access Modernization Program [9, 10]	--	--	71	71	-- [9]	-- [9]	--	--	71	71	-- [9]	-- [9]
Concourse 0	380	--	65	65	-- [9]	-- [9]	--	380	65	65	-- [9]	-- [9]
North Airfield Improvements	3	--	1	1	-- [9]	-- [9]	--	3	1	1	-- [9]	-- [9]
Total for Other Concurrent Projects in November 2019	**1,031**	**--**	**241**	**241**	**-- [9]**	**-- [9]**	**83**	**1,031**	**241**	**241**	**-- [9]**	**-- [9]**

Notes:

[1] Employee estimate is based on 473 peak day construction employees.

[2] An occupancy factor of 1.15 employees per vehicle is included in the employee trip calculations.

[3] Truck trips (i.e., haul trucks, concrete trucks) were converted at a rate of 2.5 PCEs per vehicle. Material delivery trucks are planned to be located at either the proposed primary construction staging area (existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway) or the optional primary construction staging area (on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard). The analysis assumes 100 percent of haul trucks would go to either the proposed primary or optional primary construction staging area.

[4] Employee shuttles were converted at a rate of 2.0 PCEs per vehicle. Shuttle occupancy was assumed to be 30 passengers per vehicle.

[5] The ratio of peak hour trips over total monthly employee construction hours for other concurrent projects was assumed to be equal to that calculated for the proposed Bradley West Project, CUP-RP, West Aircraft Maintenance Area, and MSC (weighted average), unless other project-specific data were available.

[6] The construction schedule for the Secured Area Access Project (SAAP) originally anticipated project completion in March 2019 but has been refined. The SAAP project is now anticipated to begin October 2017 and end April 2020, which occurs concurrent with the proposed project's cumulative peak (November 2019). However, upon review of the anticipated SAAP workforce levels, the number of employees and haul truck trips associated with the SAAP project are minimal. Furthermore, based on the anticipated shift time (6:00 a.m. to 3:30 p.m.), only a negligible portion of haul truck trips would occur during the AM peak hour (no haul truck trips during the PM peak hour), while no employee trips are estimated to occur during either the AM or PM peak hours. Therefore, it was determined that the revised SAAP construction schedule would have no appreciable effect on the cumulative peak analysis.

[7] Assumed to operate with a double-shift work schedule.

[8] Peak hour trips provided by Gibson Transportation Consulting.

[9] Employee shuttles would not affect public roadways or intersections due to the location of the project construction site and the employee parking areas. In some cases, employee parking would occur in close proximity to the construction site; in other cases, employee shuttles would travel largely or exclusively on on-airport roadways.

[10] Construction estimates provided by Connico Incorporated.

[11] Assumed to operate with a triple-shift work schedule.

Source: Gibson Transportation Consulting, Inc.; Connico Incorporated, June 2016; CDM Smith, Ricondo & Associates, Inc., July 2016.

Prepared By: Ricondo & Associates, Inc., January 2017.

For each of the cumulative projects, with exception of the MSC North Project and Landside Access Modernization Program, it was assumed that construction employees would access the traffic study area in the a.m. peak hour, and depart the traffic study area in the p.m. peak hour. The trip characteristics for the MSC North and Landside Access Modernization Program Project were based on the construction schedules developed for their respective EIRs. Furthermore, it was assumed that all construction projects would use a single work shift with the exception of the MSC North, which was assumed to utilize a double-shift work schedule with the same shift split characteristics as the Bradley West Project, and the Landside Access Modernization Program, which was assumed to utilize a triple-shift work schedule.

For purposes of distributing traffic within the construction traffic study area, employee parking and staging locations for the concurrent projects were identified. The assumed location of the construction employee parking and material staging area as well as general access and circulation patterns of construction-related vehicle activity for the proposed project are depicted in **Figure 4.4-5**. The contractor employee parking and staging areas for the eight concurrent construction projects during the cumulative peak period are also depicted in **Figure 4.4-5**, as well as other available staging locations in the area. The exhibit depicts parking and staging areas associated with the projects forecasted to be under construction concurrent with the peak cumulative period (November 2019) analyzed for this study. The regional and local area distribution patterns are generally the same as for the proposed project, with adjustments as necessary for access to the individual sites.

4.4.3.9 Planned Transportation Network Improvements

The Bradley West Project EIR identifies several intersection improvements throughout the construction traffic study area to mitigate impacts.[264] The following construction traffic study area intersections significantly impacted by the Bradley West Project would be improved when traffic activity levels reach certain activity thresholds at which an impact would be triggered.

- Imperial Highway and Sepulveda Boulevard (Intersection #12)
- La Cienega Boulevard and I-405 Ramps N/O Century Boulevard (Intersection #18)
- La Tijera Boulevard and Sepulveda Boulevard (Intersection #21)
- Sepulveda Boulevard and 76th/77th Street (Intersection #26)

Though it is possible improvements would be in place prior to the peak cumulative traffic period (November 2019), for purposes of this analysis it has been conservatively assumed that these improvements would not be in place. Therefore, the construction traffic analysis assumed that no transportation improvements would be implemented by November 2019 that would alter traffic patterns or modify the intersection capacity assumptions used in the analysis.

[264] City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, (SCH 2008121080), Section 4.2.9, September 2009.

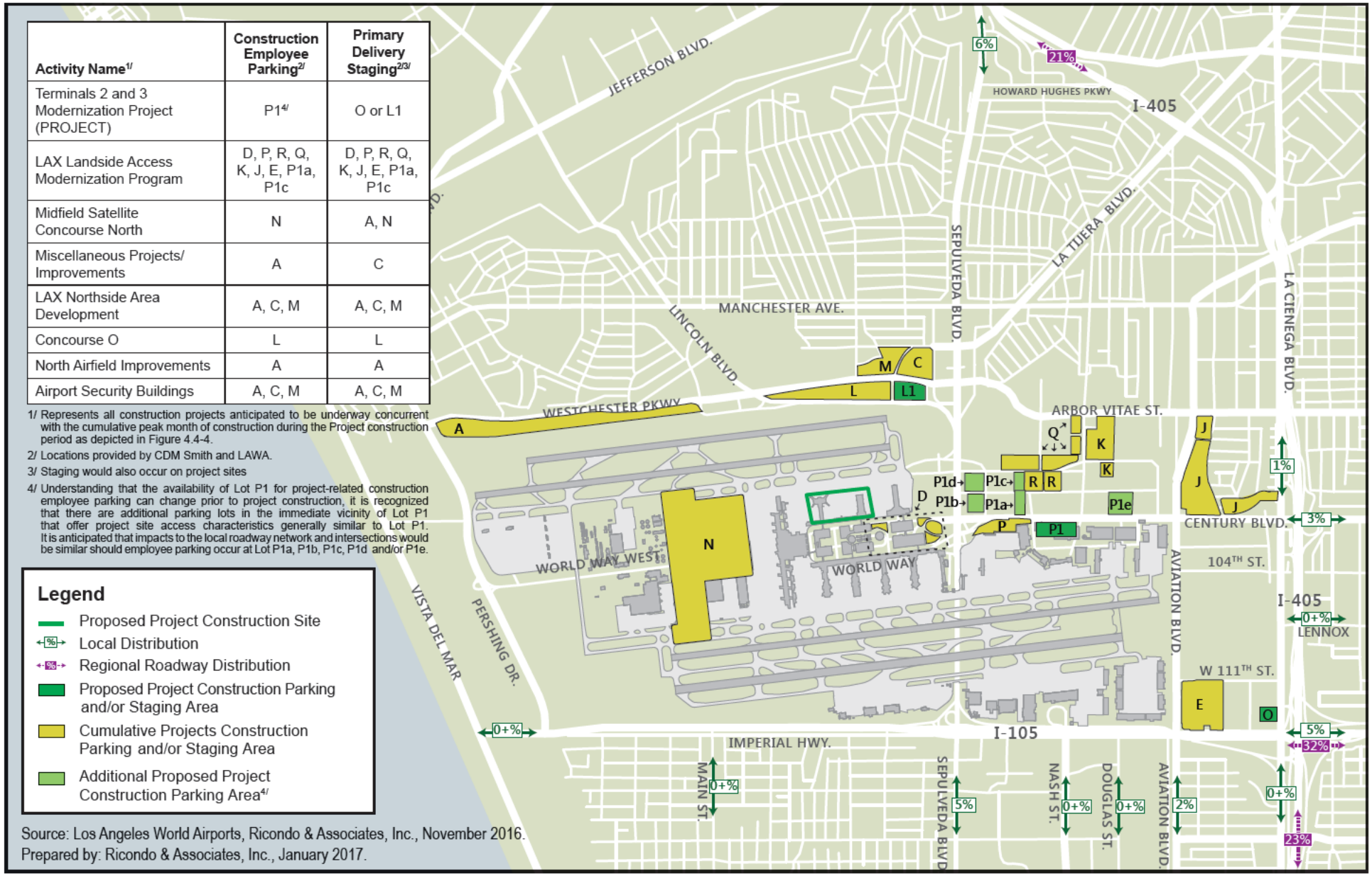
Activity Name[1/]	Construction Employee Parking[2/]	Primary Delivery Staging[2/3/]
Terminals 2 and 3 Modernization Project (PROJECT)	P1[4/]	O or L1
LAX Landside Access Modernization Program	D, P, R, Q, K, J, E, P1a, P1c	D, P, R, Q, K, J, E, P1a, P1c
Midfield Satellite Concourse North	N	A, N
Miscellaneous Projects/ Improvements	A	C
LAX Northside Area Development	A, C, M	A, C, M
Concourse O	L	L
North Airfield Improvements	A	A
Airport Security Buildings	A, C, M	A, C, M

1/ Represents all construction projects anticipated to be underway concurrent with the cumulative peak month of construction during the Project construction period as depicted in Figure 4.4-4.

2/ Locations provided by CDM Smith and LAWA.

3/ Staging would also occur on project sites

4/ Understanding that the availability of Lot P1 for project-related construction employee parking can change prior to project construction, it is recognized that there are additional parking lots in the immediate vicinity of Lot P1 that offer project site access characteristics generally similar to Lot P1. It is anticipated that impacts to the local roadway network and intersections would be similar should employee parking occur at Lot P1a, P1b, P1c, P1d and/or P1e.



Source: Los Angeles World Airports, Ricondo & Associates, Inc., November 2016.
Prepared by: Ricondo & Associates, Inc., January 2017.

Terminals 2 and 3 Modernization Project

Employee Parking and Staging Locations for Proposed Project and Other Projects at Construction Peak

Figure **4.4-5**

4.4.4 Thresholds of Significance

The construction traffic study area intersections either fall entirely within the City of Los Angeles or share a boundary with the City of El Segundo or the City of Inglewood. The intersections which fall entirely within the City of Los Angeles were evaluated for traffic impacts using the LADOT traffic impact significance criteria. Intersections lying on the boundary of multiple jurisdictions were evaluated using the more conservative threshold of significance criteria; in all of these cases the LADOT criteria were shown to have the most conservative thresholds, as the allowable project-related increase in v/c by LADOT is smaller than that of other jurisdictions.

4.4.4.1 City of El Segundo Impact Criteria

In the City of El Segundo, an impact is considered significant if the following threshold is exceeded:[265]

- The LOS is E or F, its final volume/capacity (v/c) ratio is 0.901 or greater, and the project-related increase in v/c is 0.020 or greater.

4.4.4.2 City of Inglewood Impact Criteria

In the City of Inglewood, an impact is considered significant if the following threshold is exceeded:[266]

- The LOS is F, its final v/c ratio is 1.001 or greater, and the project-related increase in v/c is 0.020 or greater.

4.4.4.3 City of Los Angeles Impact Criteria

In accordance with LADOT criteria defined in its Traffic Study Policy and Procedures,[267] an impact is considered to be significant if one of the following thresholds is exceeded:

- The LOS is C, its final v/c ratio is 0.701 to 0.80, and the project-related increase in v/c is 0.040 or greater, or
- The LOS is D, its final v/c ratio is 0.801 to 0.90, and the project-related increase in v/c is 0.020 or greater, or
- The LOS is E or F, its final v/c ratio is 0.901 or greater, and the project-related increase in v/c is 0.010 or greater.

The "final v/c ratio" as defined by LADOT consists of the future v/c ratio at an intersection that includes volume from the project, baseline, ambient background growth, and other cumulative development projects, but without proposed intersection traffic mitigation.

The "project-related increase" is defined as the change in the unmitigated LOS (v/c) condition between the (a) future v/c "with" the project, baseline, ambient background growth (for the cumulative impact analysis), and other cumulative development project growth, and (b) the future v/c "without" the project, but with baseline, ambient background growth, and other cumulative development project growth.

4.4.4.4 Temporary Transportation Impacts During Construction

A significant impact on transportation during construction would occur if the proposed project would result in one or more of the following conditions:

- Result in temporary lane, alley, or street closures within a major or secondary highway right-of-way for more than one day.

---

[265] City of El Segundo, Planning and Building Safety Department, City of El Segundo, Circulation Element of the General Plan, Policy C3-1.2, September 2004.

[266] Raju Associates, Inc., Traffic Study Assumptions and Methodology Memorandum to City of Inglewood, October 27, 2015.

[267] City of Los Angeles Department of Transportation, Traffic Study Policies and Procedures, August 2014.

- Result in the loss of regular vehicular or pedestrian access to airport, commercial, or industrial facilities for more than one day.
- Result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route.

These thresholds of significance were utilized because they address the concerns for traffic disruption associated with construction of the proposed project within the CTA. These thresholds were derived from the L.A. CEQA Thresholds Guide.[268]

4.4.5 Impacts Analysis

4.4.5.1 Impact Comparison 1: Peak Project Construction Traffic Plus Baseline Traffic Measured Against Baseline

This comparison provides the basis for determining project-related impacts. The comparison is based on project-specific traffic generation during the peak construction period (March 2020) added to baseline traffic volumes. The resulting levels of service were compared to the levels of service associated with the baseline condition. A significant impact would be realized if the thresholds of significance are met or exceeded. **Table 4.4-7** and **Table 4.4-8** compare LOS under baseline and project-plus-baseline conditions. **Table 4.4-7** presents the results assuming material staging is located at the proposed primary construction staging area (existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway), while the results in **Table 4.4-8** assume material staging is located at the optional primary construction staging area (area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard). As shown, no significant impacts would occur under the proposed project assuming material staging occurs at either the proposed primary or optional primary construction staging area.

4.4.5.2 Impact Comparison 2: Cumulative Construction Traffic (November 2019) Measured Against Baseline

This comparison was conducted in two steps, which is consistent with State CEQA Guidelines Section 15130. An initial comparison was conducted by comparing the LOS (v/c) associated with peak cumulative traffic volumes with the baseline levels of service. This initial comparison was conducted to determine if there would be a significant cumulative impact. If a significant cumulative impact was determined, then an additional comparison was conducted to determine if the proposed project would make a cumulatively considerable contribution to the significant cumulative impact. This second comparison was conducted by comparing cumulative conditions with and without the proposed project. Cumulatively considerable contributions are realized when the thresholds of significance defined above are met or exceeded. If the project's contribution to a significant cumulative impact is not determined to be cumulatively considerable, then the project's impact under cumulative conditions is considered less than significant.

The impact comparisons are depicted in **Table 4.4-9** (proposed primary construction staging area) and **Table 4.4-10** (optional primary construction staging area). As shown in **Table 4.4-9**, 21 intersections would be significantly impacted during the cumulative peak construction period (November 2019) with staging occurring at the proposed primary construction staging area. Furthermore, the proposed project's contribution to such significant cumulative impacts would be cumulatively considerable at two of the significantly impacted intersections: Century Boulevard and Sepulveda Boulevard (Intersection #5) and Imperial Highway and I-105 Ramp (Intersection #14). The cumulatively considerable impact at Century Boulevard and Sepulveda Boulevard (Intersection #5) would be generated by construction employees exiting the employee parking area via Avion Drive to westbound Century Boulevard and then southbound Sepulveda Boulevard. The cumulatively considerable impact at Imperial Highway and I-105 Ramp (Intersection #14) would be generated by haul truck traffic transferring materials to/from the proposed

[268] City of Los Angeles, L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles, 2006.

primary construction staging area via La Cienega Boulevard, Imperial Highway, Pershing Drive, and Westchester Parkway.

Of the remaining significantly impacted intersections, the proposed project would not contribute (change in V/C of 0.000) to impacts to 4 of the 21 significantly impacted intersections, and would only minimally contribute (change in V/C between 0.001 and 0.006) to impacts to the remaining significantly impacted intersections during the cumulative peak construction period (November 2019), assuming construction staging occurs at the proposed primary construction staging area. Similarly, assuming construction staging occurs at the optional primary construction staging area (shown in **Table 4.4-10**), 21 intersections would be significantly impacted during the cumulative peak construction period (November 2019); however, with the optional primary construction staging area, the proposed project's contribution to such significant cumulative impacts would be cumulatively considerable at only one of the significantly impacted intersections: Century Boulevard and Sepulveda Boulevard (Intersection #5), caused by construction employees exiting the employee parking area via Avion Drive to westbound Century Boulevard and then southbound Sepulveda Boulevard. Of the remaining significantly impacted intersections, the proposed project would not contribute (change in v/c of 0.000) to impacts to 10 of the 21 significantly impacted intersections, and would only minimally contribute (change in v/c between 0.001 and 0.006) to impacts to the remaining significantly impacted intersections during the cumulative peak construction period, assuming construction staging occurs at the optional primary construction staging area.

4.4.5.3 Temporary Transportation Impacts During Construction

Construction of the proposed project would occur within the northern portion of the CTA, at T2 and T3 and adjacent apron areas. This construction activity would temporarily add to existing traffic volumes within the CTA, which, in turn, could temporarily adversely affect roadway link and pedestrian flows. To the extent that project-related construction within the CTA would require temporary lane closures and detours, on-Airport traffic conditions could be impacted. To minimize impacts to the CTA roadway system and Airport operations during construction, any lane closures required during construction would occur during the night shift whenever possible. It is unlikely that lane closures would be required for any extended period of time. There is the possibility that a short-term lane closure on the upper level roadway within the CTA may be needed at some point in the construction program for the temporary installation of a crane to transfer/place structural steel to areas within the project site. [269] Such a lane closure, if any, would be unlikely to exceed one week, and would require advance coordination with, and approval by LAWA in accordance with CALM procedures. Access to the passenger terminals would be maintained throughout any lane closures, but drop-off and pick-up areas may temporarily shift. Although lane closures may exceed one day, the lane closures would not occur on a major or secondary highway, they would not result in the loss of vehicle or pedestrian access to the Airport, nor would they result in the loss of a bus stop or route; therefore, based on the thresholds described above in Section 4.4.4.4, transportation impacts of temporary lane closures associated with construction of the proposed project would be less than significant.

[269] The need, if any, for the use and placement of such a crane will be up to the construction means and methods implemented by the selected construction contractor.

Table 4.4-7
Proposed Project - Level of Service Analysis Results - Impact Comparison 1 Baseline Compared to Project Plus Baseline (Proposed Primary Construction Staging Area)

Intersection		Peak Hour [1]	Baseline		Project Plus Baseline		Change in V/C	Significant Impact
			V/C [2]	LOS [3]	V/C [2]	LOS [3]		
1.	Aviation Boulevard and Century Boulevard	AM Peak Hour	0.598	A	0.600	A	0.002	No
		PM Peak Hour	0.826	D	0.826	D	0.000	No
2.	Imperial Highway and Aviation Boulevard	AM Peak Hour	0.712	C	0.712	C	0.000	No
		PM Peak Hour	0.650	B	0.653	B	0.003	No
3.	Aviation Boulevard and 111th Street	AM Peak Hour	0.540	A	0.540	A	0.000	No
		PM Peak Hour	0.478	A	0.478	A	0.000	No
4.	La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.817	D	0.818	D	0.001	No
		PM Peak Hour	0.899	D	0.899	D	0.000	No
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.824	D	0.841	D	0.017	No
		PM Peak Hour	0.725	C	0.725	C	0.000	No
6.	Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.924	E	0.924	E	0.000	No
		PM Peak Hour	0.676	B	0.676	B	0.000	No
7.	Imperial Highway and Douglas Street	AM Peak Hour	0.393	A	0.397	A	0.004	No
		PM Peak Hour	0.623	B	0.627	B	0.004	No
8.	Sepulveda Boulevard and Howard Hughes Pkwy.	AM Peak Hour	0.671	B	0.673	B	0.002	No
		PM Peak Hour	0.651	B	0.651	B	0.000	No
9.	Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.474	A	0.490	A	0.016	No
		PM Peak Hour	0.698	B	0.700	B	0.002	No
10.	Imperial Highway and Main Street	AM Peak Hour	0.616	B	0.622	B	0.006	No
		PM Peak Hour	0.624	B	0.629	B	0.005	No
11.	Imperial Highway and Pershing Drive	AM Peak Hour	0.429	A	0.434	A	0.005	No
		PM Peak Hour	0.498	A	0.504	A	0.006	No
12.	Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.934	E	0.935	E	0.001	No
		PM Peak Hour	1.323	F	1.323	F	0.000	No
13.	Imperial Highway and Nash Street	AM Peak Hour	0.614	B	0.618	B	0.004	No
		PM Peak Hour	0.383	A	0.386	A	0.003	No
14.	Imperial Highway and I-105 Ramp	AM Peak Hour	0.811	D	0.824	D	0.013	No
		PM Peak Hour	0.556	A	0.561	A	0.005	No
15.	Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.597	A	0.599	A	0.002	No
		PM Peak Hour	0.832	D	0.832	D	0.000	No
16.	La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.553	A	0.553	A	0.000	No
		PM Peak Hour	0.530	A	0.530	A	0.000	No
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.360	A	0.360	A	0.000	No
		PM Peak Hour	0.301	A	0.301	A	0.000	No
18.	La Cienega Blvd. & I-405 Southbound Ramps North	AM Peak Hour	0.904	E	0.905	E	0.001	No

Table 4.4-7
Proposed Project - Level of Service Analysis Results - Impact Comparison 1 Baseline Compared to Project Plus Baseline (Proposed Primary Construction Staging Area)

Intersection		Peak Hour [1]	Baseline		Project Plus Baseline		Change in V/C	Significant Impact
			V/C [2]	LOS [3]	V/C [2]	LOS [3]		
	of Century	PM Peak Hour	0.754	C	0.754	C	0.000	No
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.449	A	0.464	A	0.015	No
		PM Peak Hour	0.351	A	0.351	A	0.000	No
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.507	A	0.528	A	0.021	No
		PM Peak Hour	0.291	A	0.314	A	0.023	No
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.692	B	0.695	B	0.003	No
		PM Peak Hour	0.819	D	0.819	D	0.000	No
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.780	C	0.780	C	0.000	No
		PM Peak Hour	0.964	E	0.964	E	0.000	No
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.865	D	0.868	D	0.003	No
		PM Peak Hour	0.885	D	0.885	D	0.000	No
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.473	A	0.478	A	0.005	No
		PM Peak Hour	0.286	A	0.298	A	0.012	No
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.863	D	0.866	D	0.003	No
		PM Peak Hour	0.893	D	0.893	D	0.000	No
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.915	E	0.917	E	0.002	No
		PM Peak Hour	0.487	A	0.487	A	0.000	No
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.780	C	0.782	C	0.002	No
		PM Peak Hour	0.504	A	0.504	A	0.000	No
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.643	B	0.646	B	0.003	No
		PM Peak Hour	0.457	A	0.457	A	0.000	No
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.375	A	0.375	A	0.000	No
		PM Peak Hour	0.407	A	0.407	A	0.000	No

Notes:
[1] The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.), and the p.m. peak (4:00 p.m. - 5:00 p.m.).
[2] Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6 and #15, which are not a part of the LADOT system.
[3] Level of Service range: A (excellent) to F (failure).
Source: Appendix D.3 of this EIR.

Table 4.4-8
Proposed Project - Level of Service Analysis Results - Impact Comparison 1 Baseline Compared to Project Plus Baseline (Optional Primary Construction Staging Area)

Intersection		Peak Hour [1]	Baseline		Project Plus Baseline		Change in V/C	Significant Impact
			V/C [2]	LOS [3]	V/C [2]	LOS [3]		
1.	Aviation Boulevard and Century Boulevard	AM Peak Hour	0.598	A	0.600	A	0.002	No
		PM Peak Hour	0.826	D	0.826	D	0.000	No
2.	Imperial Highway and Aviation Boulevard	AM Peak Hour	0.712	C	0.712	C	0.000	No
		PM Peak Hour	0.650	B	0.650	B	0.000	No
3.	Aviation Boulevard and 111th Street	AM Peak Hour	0.540	A	0.540	A	0.000	No
		PM Peak Hour	0.478	A	0.478	A	0.000	No
4.	La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.817	D	0.818	D	0.001	No
		PM Peak Hour	0.899	D	0.899	D	0.000	No
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.824	D	0.841	D	0.017	No
		PM Peak Hour	0.725	C	0.725	C	0.000	No
6.	Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.924	E	0.924	E	0.000	No
		PM Peak Hour	0.676	B	0.676	B	0.000	No
7.	Imperial Highway and Douglas Street	AM Peak Hour	0.393	A	0.393	A	0.000	No
		PM Peak Hour	0.623	B	0.623	B	0.000	No
8.	Sepulveda Boulevard and Howard Hughes Pkwy.	AM Peak Hour	0.671	B	0.673	B	0.002	No
		PM Peak Hour	0.651	B	0.651	B	0.000	No
9.	Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.474	A	0.474	A	0.000	No
		PM Peak Hour	0.698	B	0.698	B	0.000	No
10.	Imperial Highway and Main Street	AM Peak Hour	0.616	B	0.622	B	0.006	No
		PM Peak Hour	0.624	B	0.629	B	0.005	No
11.	Imperial Highway and Pershing Drive	AM Peak Hour	0.429	A	0.434	A	0.005	No
		PM Peak Hour	0.498	A	0.504	A	0.006	No
12.	Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.934	E	0.935	E	0.001	No
		PM Peak Hour	1.323	F	1.323	F	0.000	No
13.	Imperial Highway and Nash Street	AM Peak Hour	0.614	B	0.614	B	0.000	No
		PM Peak Hour	0.383	A	0.383	A	0.000	No
14.	Imperial Highway and I-105 Ramp	AM Peak Hour	0.811	D	0.814	D	0.003	No
		PM Peak Hour	0.556	A	0.556	A	0.000	No
15.	Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.597	A	0.597	A	0.000	No
		PM Peak Hour	0.832	D	0.832	D	0.000	No
16.	La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.553	A	0.553	A	0.000	No
		PM Peak Hour	0.530	A	0.530	A	0.000	No
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.360	A	0.360	A	0.000	No
		PM Peak Hour	0.301	A	0.301	A	0.000	No
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.904	E	0.905	E	0.001	No
		PM Peak Hour	0.754	C	0.754	C	0.000	No

19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.449	A	0.464	A	0.015	No
		PM Peak Hour	0.351	A	0.351	A	0.000	No
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.507	A	0.507	A	0.000	No
		PM Peak Hour	0.291	A	0.291	A	0.000	No
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.692	B	0.695	B	0.003	No
		PM Peak Hour	0.819	D	0.819	D	0.000	No
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.780	C	0.780	C	0.000	No
		PM Peak Hour	0.964	E	0.964	E	0.000	No
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.865	D	0.868	D	0.003	No
		PM Peak Hour	0.885	D	0.885	D	0.000	No
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.473	A	0.478	A	0.005	No
		PM Peak Hour	0.286	A	0.298	A	0.012	No
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.863	D	0.866	D	0.003	No
		PM Peak Hour	0.893	D	0.893	D	0.000	No
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.915	E	0.917	E	0.002	No
		PM Peak Hour	0.487	A	0.487	A	0.000	No
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.780	C	0.782	C	0.002	No
		PM Peak Hour	0.504	A	0.504	A	0.000	No
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.643	B	0.646	B	0.003	No
		PM Peak Hour	0.457	A	0.457	A	0.000	No
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.375	A	0.375	A	0.000	No
		PM Peak Hour	0.407	A	0.407	A	0.000	No

Notes:

[1] The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.), and the p.m. peak (4:00 p.m. - 5:00 p.m.).

[2] Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6 and #15, which are not a part of the LADOT system.

[3] Level of Service range: A (excellent) to F (failure).

Source: Appendix D.3 of this EIR.

Table 4.4-9
Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019) – Proposed Primary Construction Staging Area

Intersection		Peak Hour [1]	Baseline [A]		Cumulative Peak (November 2019) Without Project [B]		With Project [C]			Cumulative Impact Determination [C]-[A]		Cumulatively Considerable Determination [C]-[B]
			V/C [2]	LOS [3]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	Change in V/C	Significant Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
1.	Aviation Boulevard and Century Boulevard	AM Peak Hour	0.598	A	0.690	B	0.691	B	0.093	No	0.001	No
		PM Peak Hour	0.826	D	0.969	E	0.969	E	0.143	Yes	0.000	No
2.	Imperial Highway and Aviation Boulevard	AM Peak Hour	0.712	C	0.820	D	0.820	D	0.108	Yes	0.000	No
		PM Peak Hour	0.650	B	0.761	C	0.764	C	0.114	Yes	0.003	No
3.	Aviation Boulevard and 111th Street	AM Peak Hour	0.540	A	0.608	B	0.608	B	0.068	No	0.000	No
		PM Peak Hour	0.478	A	0.533	A	0.533	A	0.055	No	0.000	No
4.	La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.817	D	0.871	D	0.872	D	0.055	Yes	0.001	No
		PM Peak Hour	0.899	D	0.999	E	0.999	E	0.100	Yes	0.000	No
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.824	D	0.926	E	0.942	E	0.118	Yes	0.016	Yes
		PM Peak Hour	0.725	C	0.775	C	0.776	C	0.051	Yes	0.001	No
6.	Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.924	E	1.010	F	1.010	F	0.086	Yes	0.000	No
		PM Peak Hour	0.676	B	0.742	C	0.742	C	0.066	Yes	0.000	No
7.	Imperial Highway and Douglas Street	AM Peak Hour	0.393	A	0.470	A	0.473	A	0.080	No	0.003	No
		PM Peak Hour	0.623	B	0.713	C	0.716	C	0.093	Yes	0.003	No
8.	Sepulveda Boulevard and Howard Hughes Parkway	AM Peak Hour	0.671	B	0.768	C	0.770	C	0.099	Yes	0.002	No
		PM Peak Hour	0.651	B	0.700	B	0.700	B	0.049	No	0.000	No
9.	Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.474	A	0.517	A	0.525	A	0.051	No	0.008	No
		PM Peak Hour	0.698	B	0.758	C	0.759	C	0.061	Yes	0.001	No
10.	Imperial Highway and Main Street	AM Peak Hour	0.616	B	1.179	F	1.185	F	0.569	Yes	0.006	No
		PM Peak Hour	0.624	B	0.839	D	0.842	D	0.218	Yes	0.003	No
11.	Imperial Highway and Pershing Drive	AM Peak Hour	0.429	A	0.523	A	0.527	A	0.098	No	0.004	No
		PM Peak Hour	0.498	A	0.723	C	0.726	C	0.228	Yes	0.003	No
12.	Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.934	E	1.117	F	1.118	F	0.184	Yes	0.001	No
		PM Peak Hour	1.323	F	1.477	F	1.477	F	0.154	Yes	0.000	No
13.	Imperial Highway and Nash Street	AM Peak Hour	0.614	B	0.848	D	0.854	D	0.240	Yes	0.006	No
		PM Peak Hour	0.383	A	0.458	A	0.461	A	0.078	No	0.003	No
14.	Imperial Highway and I-105 Ramp	AM Peak Hour	0.811	D	0.965	E	0.977	E	0.166	Yes	0.012	Yes
		PM Peak Hour	0.556	A	0.648	B	0.652	B	0.096	No	0.004	No
15.	Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.597	A	0.650	B	0.651	B	0.054	No	0.001	No
		PM Peak Hour	0.832	D	0.895	D	0.895	D	0.063	Yes	0.000	No
16.	La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.553	A	0.595	A	0.595	A	0.042	No	0.000	No
		PM Peak Hour	0.530	A	0.568	A	0.568	A	0.038	No	0.000	No
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.360	A	0.389	A	0.389	A	0.029	No	0.000	No

Table 4.4-9
Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019) – Proposed Primary Construction Staging Area

Intersection		Peak Hour [1]	Baseline [A]		Cumulative Peak (November 2019) Without Project [B]		Cumulative Peak (November 2019) With Project [C]			Cumulative Impact Determination [C]-[A]		Cumulatively Considerable Determination [C]-[B]
			V/C [2]	LOS [3]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	Change in V/C	Significant Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
		PM Peak Hour	0.301	A	0.324	A	0.324	A	0.023	No	0.000	No
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.904	E	0.964	E	0.964	E	0.060	Yes	0.000	No
		PM Peak Hour	0.754	C	0.804	D	0.804	D	0.050	Yes	0.000	No
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.449	A	0.485	A	0.497	A	0.048	No	0.012	No
		PM Peak Hour	0.351	A	0.400	A	0.400	A	0.049	No	0.000	No
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.507	A	0.553	A	0.571	A	0.064	No	0.018	No
		PM Peak Hour	0.291	A	0.325	A	0.345	A	0.054	No	0.020	No
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.692	B	0.740	C	0.742	C	0.050	Yes	0.002	No
		PM Peak Hour	0.819	D	0.885	D	0.887	D	0.068	Yes	0.002	No
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.780	C	0.834	D	0.835	D	0.055	Yes	0.001	No
		PM Peak Hour	0.964	E	1.113	F	1.113	F	0.149	Yes	0.000	No
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.865	D	0.923	E	0.925	E	0.060	Yes	0.002	No
		PM Peak Hour	0.885	D	1.011	F	1.011	F	0.126	Yes	0.000	No
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.473	A	0.632	B	0.642	B	0.169	No	0.010	No
		PM Peak Hour	0.286	A	0.558	A	0.567	A	0.281	No	0.009	No
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.863	D	1.091	F	1.095	F	0.232	Yes	0.004	No
		PM Peak Hour	0.893	D	1.167	F	1.171	F	0.278	Yes	0.004	No
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.915	E	0.976	E	0.978	E	0.063	Yes	0.002	No
		PM Peak Hour	0.487	A	0.584	A	0.584	A	0.097	No	0.000	No
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.780	C	0.833	D	0.835	D	0.055	Yes	0.002	No
		PM Peak Hour	0.504	A	0.601	B	0.601	B	0.097	No	0.000	No
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.643	B	0.687	B	0.690	B	0.047	No	0.003	No
		PM Peak Hour	0.457	A	0.551	A	0.551	A	0.094	No	0.000	No
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.375	A	0.404	A	0.404	A	0.029	No	0.000	No
		PM Peak Hour	0.407	A	0.438	A	0.438	A	0.031	No	0.000	No

Notes:
[1] The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.), and the p.m. peak (4:00 p.m. - 5:00 p.m.).
[2] Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6, and #15, which are not a part of the LADOT system.
[3] Level of Service range: A (excellent) to F (failure).
Source: Appendix D.3 of this EIR.

Table 4.4-10
Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019) – Optional Primary Construction Staging Area

			Cumulative Peak (November 2019)									
			Baseline [A]		Without Project [B]		With Project [C]		Cumulative Impact Determination [C]-[A]		Cumulatively Considerable Determination [C]-[B]	
Intersection		Peak Hour [1]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	Change in V/C	Significant Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
1.	Aviation Boulevard and Century Boulevard	AM Peak Hour	0.598	A	0.690	B	0.691	B	0.093	No	0.001	No
		PM Peak Hour	0.826	D	0.969	E	0.969	E	0.143	Yes	0.000	No
2.	Imperial Highway and Aviation Boulevard	AM Peak Hour	0.712	C	0.820	D	0.820	D	0.108	Yes	0.000	No
		PM Peak Hour	0.650	B	0.761	C	0.761	C	0.111	Yes	0.000	No
3.	Aviation Boulevard and 111th Street	AM Peak Hour	0.540	A	0.608	B	0.608	B	0.068	No	0.000	No
		PM Peak Hour	0.478	A	0.533	A	0.533	A	0.055	No	0.000	No
4.	La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.817	D	0.871	D	0.872	D	0.055	Yes	0.001	No
		PM Peak Hour	0.899	D	0.999	E	0.999	E	0.100	Yes	0.000	No
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.824	D	0.926	E	0.941	E	0.117	Yes	0.015	Yes
		PM Peak Hour	0.725	C	0.775	C	0.775	C	0.050	Yes	0.000	No
6.	Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.924	E	1.010	F	1.010	F	0.086	Yes	0.000	No
		PM Peak Hour	0.676	B	0.742	C	0.742	C	0.066	Yes	0.000	No
7.	Imperial Highway and Douglas Street	AM Peak Hour	0.393	A	0.470	A	0.470	A	0.077	No	0.000	No
		PM Peak Hour	0.623	B	0.713	C	0.713	C	0.090	Yes	0.000	No
8.	Sepulveda Boulevard and Howard Hughes Parkway	AM Peak Hour	0.671	B	0.768	C	0.770	C	0.099	Yes	0.002	No
		PM Peak Hour	0.651	B	0.700	B	0.700	B	0.049	No	0.000	No
9.	Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.474	A	0.517	A	0.517	A	0.043	No	0.000	No
		PM Peak Hour	0.698	B	0.758	C	0.758	C	0.060	Yes	0.000	No
10.	Imperial Highway and Main Street	AM Peak Hour	0.616	B	1.179	F	1.185	F	0.569	Yes	0.006	No
		PM Peak Hour	0.624	B	0.839	D	0.842	D	0.218	Yes	0.003	No
11.	Imperial Highway and Pershing Drive	AM Peak Hour	0.429	A	0.523	A	0.527	A	0.098	No	0.004	No
		PM Peak Hour	0.498	A	0.723	C	0.726	C	0.228	Yes	0.003	No
12.	Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.934	E	1.117	F	1.118	F	0.184	Yes	0.001	No
		PM Peak Hour	1.323	F	1.477	F	1.477	F	0.154	Yes	0.000	No
13.	Imperial Highway and Nash Street	AM Peak Hour	0.614	B	0.848	D	0.848	D	0.234	Yes	0.000	No
		PM Peak Hour	0.383	A	0.458	A	0.458	A	0.075	No	0.000	No
14.	Imperial Highway and I-105 Ramp	AM Peak Hour	0.811	D	0.965	E	0.968	E	0.157	Yes	0.003	No
		PM Peak Hour	0.556	A	0.648	B	0.648	B	0.092	No	0.000	No
15.	Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.597	A	0.650	B	0.650	B	0.053	No	0.000	No
		PM Peak Hour	0.832	D	0.895	D	0.895	D	0.063	Yes	0.000	No

Table 4.4-10
Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019) – Optional Primary Construction Staging Area

Intersection		Peak Hour [1]	Cumulative Peak (November 2019)									
			Baseline [A]		Without Project [B]		With Project [C]		Cumulative Impact Determination [C]-[A]		Cumulatively Considerable Determination [C]-[B]	
			V/C [2]	LOS [3]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	Change in V/C	Significant Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?
16.	La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.553	A	0.595	A	0.595	A	0.042	No	0.000	No
		PM Peak Hour	0.530	A	0.568	A	0.568	A	0.038	No	0.000	No
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.360	A	0.389	A	0.389	A	0.029	No	0.000	No
		PM Peak Hour	0.301	A	0.324	A	0.324	A	0.023	No	0.000	No
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.904	E	0.964	E	0.964	E	0.060	Yes	0.000	No
		PM Peak Hour	0.754	C	0.804	D	0.804	D	0.050	Yes	0.000	No
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.449	A	0.485	A	0.497	A	0.048	No	0.012	No
		PM Peak Hour	0.351	A	0.400	A	0.400	A	0.049	No	0.000	No
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.507	A	0.553	A	0.553	A	0.046	No	0.000	No
		PM Peak Hour	0.291	A	0.325	A	0.325	A	0.034	No	0.000	No
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.692	B	0.740	C	0.742	C	0.050	Yes	0.002	No
		PM Peak Hour	0.819	D	0.885	D	0.885	D	0.066	Yes	0.000	No
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.780	C	0.834	D	0.834	D	0.054	Yes	0.000	No
		PM Peak Hour	0.964	E	1.113	F	1.113	F	0.149	Yes	0.000	No
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.865	D	0.923	E	0.925	E	0.060	Yes	0.002	No
		PM Peak Hour	0.885	D	1.011	F	1.011	F	0.126	Yes	0.000	No
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.473	A	0.632	B	0.642	B	0.169	No	0.010	No
		PM Peak Hour	0.286	A	0.558	A	0.567	A	0.281	No	0.009	No
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.863	D	1.091	F	1.091	F	0.228	Yes	0.000	No
		PM Peak Hour	0.893	D	1.167	F	1.167	F	0.274	Yes	0.000	No
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.915	E	0.976	E	0.978	E	0.063	Yes	0.002	No
		PM Peak Hour	0.487	A	0.584	A	0.584	A	0.097	No	0.000	No
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.780	C	0.833	D	0.835	D	0.055	Yes	0.002	No
		PM Peak Hour	0.504	A	0.601	B	0.601	B	0.097	No	0.000	No
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.643	B	0.687	B	0.689	B	0.046	No	0.002	No
		PM Peak Hour	0.457	A	0.551	A	0.551	A	0.094	No	0.000	No
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.375	A	0.404	A	0.404	A	0.029	No	0.000	No
		PM Peak Hour	0.407	A	0.438	A	0.438	A	0.031	No	0.000	No

Table 4.4-10
Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019) – Optional Primary Construction Staging Area

		Cumulative Peak (November 2019)									
		Baseline [A]		Without Project [B]		With Project [C]		Cumulative Impact Determination [C]-[A]		Cumulatively Considerable Determination [C]-[B]	
Intersection	Peak Hour [1]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	V/C [2]	LOS [3]	Change in V/C	Significant Cumulative Impact?	Change in V/C	Cumulatively Considerable Contribution?

Notes:
[1] The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.), and the p.m. peak (4:00 p.m. - 5:00 p.m.).
[2] Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at each intersection with the exception of intersections #6, and #15, which are not a part of the LADOT system.
[3] Level of Service range: A (excellent) to F (failure).
Source: Appendix D.3 of this EIR.

4.4.6 Mitigation Measures

As described in Section 4.4.5, assuming construction staging occurs at the proposed primary construction staging area, the proposed project's contribution would be cumulatively considerable at two of the significantly impacted intersections (Century Boulevard and Sepulveda Boulevard [Intersection #5] and Imperial Highway and I-105 Ramp [Intersection #14]). Conversely, assuming construction staging occurs at the optional primary construction staging area, the proposed project's contribution would be cumulatively considerable at only one of the significantly impacted intersections (Century Boulevard and Sepulveda Boulevard [Intersection #5]).

Regarding the cumulatively considerable significant construction traffic impact at Imperial Highway and I-105, due to the location of the entry/exit point along La Cienega Boulevard, haul trucks would be required to exit the proposed primary construction staging area via southbound La Cienega Boulevard, while exits via northbound La Cienega Boulevard would be prohibited (i.e., at the location of the proposed primary construction staging area, left turns onto La Cienega Boulevard are prohibited). Furthermore, considering the designated truck routes described below in Section 4.4.8, haul trucks transferring materials to/from the proposed primary construction staging area would be required to pass directly through the intersection of Imperial Highway and I-105 (Intersection #14). As such, no mitigation is feasible for the cumulatively considerable significant construction traffic impact at Imperial Highway and I-105 Ramp (Intersection #14).

Regarding the cumulatively considerable significant construction traffic impact at Century Boulevard and Sepulveda Boulevard (Intersection #5), regardless of whether construction staging occurs at the proposed primary construction staging area or at the optional primary construction staging area, no feasible mitigation measures are available. The subject impact is anticipated to occur from construction employees finishing the swing shift (i.e., 11:00 p.m. to 7:00 a.m.) exiting the proposed construction employee parking area, specifically LAX Lot F near Avion Drive and Century Boulevard, that are likely to proceed westbound on Century Boulevard in order to get to southbound on Sepulveda Boulevard, which provides ready access to the nearby freeway system (I-105 and I-405). This travel route would require a left-turn at Sepulveda Boulevard from Century Boulevard, which causes the project's cumulatively considerable contribution to the significant impact at Intersection #5 during the AM peak hour. Although this significant impact could be reduced to less than significant by requiring those construction employees to only turn right onto eastbound Century Boulevard when exiting the subject parking area, thereby avoiding the left-turn movement at Intersection #5, the ability to implement, monitor, and enforce such a requirement is not feasible. Various consideration related to the infeasibility of such a measure include: (1) the ability for LAWA to legally require contractor employees to turn one way or another onto a public roadway system; and, (2) the ability to monitor and enforce implementation of this requirement relative to distinguishing project-related contractor employee personal vehicles from all other vehicles travelling in the area during the AM peak hour in order to confirm that project-related employees are turning right from Avion Drive onto Century Boulevard instead of turning left, and, furthermore, trying to account for construction employees that exit the parking area and turn left from Avion Drive to Century Boulevard, but want to head northbound on Sepulveda Boulevard and would, therefore, not be turning left at Intersection #5. Also, the typical ways of mitigating such an intersection impact through means such as making changes in signal phasing, restriping the intersection to add another turn-lane, or physically widening the intersection to add a turn lane(s) are not considered feasible in this instance. More specifically, changing the signal timing to provide additional time for left turns from westbound Century Boulevard to southbound Sepulveda Boulevard would reduce the amount of time available for through traffic on Sepulveda Boulevard, which is the more important traffic movement at this intersection during the morning peak hour. Relative to restriping the intersection to provide an additional left turn lane, the east leg of the subject intersection currently has a dedicated left-turn lane and an adjacent optional left-turn or straight-thru lane (i.e., westbound drivers in that lane can either turn left onto southbound Sepulveda Boulevard or continue straight onto "Little Century" into the CTA); hence, adding an additional left turn lane would require shifting the optional left-turn/straight thru lane northward, in which case the straight-thru path of travel would no longer align with the receiving lane in the west leg of the intersection. Physically widening

the subject intersection to accommodate the additional left turn lane is constrained on the south by the transition ramp from northbound Sepulveda Boulevard to eastbound Century Boulevard, and on the north by the presence of the Hyatt Regency hotel. Any such modifications to the intersection, be it restriping or physical improvements, would require approval from Caltrans (i.e., Sepulveda Boulevard is a part of Highway 1 at that location). Notwithstanding the traffic operations issues, physical constraints, and regulatory agency approval need noted above, the requirements for such implementing measures are not considered to be proportional to nature of the impact being mitigated; specifically, the subject impact would only occur when a swing-shift is needed during the construction program, at which timing, frequency, and duration of the need for swing-shifts, if any, is uncertain.

4.4.7 Level of Significance after Mitigation

As indicated above, there are no feasible mitigation measures available to address the cumulatively considerable significant construction traffic impact at Imperial Highway and I-105 Ramp (Intersection #14) assuming construction staging occurs at the proposed primary construction staging area; therefore, the impact at this intersection would be significant and unavoidable. More specifically, as described above in Section 4.4.6, the cumulatively considerable impact at Imperial Highway and I-105 Ramp (Intersection #14) would be generated by haul truck traffic transferring materials to/from the proposed primary construction staging area via La Cienega Boulevard, Imperial Highway, Pershing Drive, and Westchester Parkway. Due to the location of the entry/exit point along La Cienega Boulevard, haul trucks would be required to exit the proposed primary construction staging area via southbound La Cienega Boulevard, while exits via northbound La Cienega Boulevard would be prohibited. Furthermore, considering the designated truck routes described below in Section 4.4.8, haul trucks transferring materials to/from the proposed primary construction staging area would be required to pass directly through the intersection of Imperial Highway and I-105 (Intersection #14). For these reasons, no feasible mitigation measures were identified for the proposed project's contribution to the cumulatively significant impact at Intersection #14; therefore, the impact is considered significant and unavoidable. As stated below in Section 4.4.8, to the extent possible, truck deliveries of bulk materials such as aggregate, bulk cement, dirt, etc. to the project site, and hauling of material from the project site, shall be scheduled during off-peak hours to avoid the peak commuter and Airport traffic periods on designated haul routes. The analysis described in this section considers a conservative scenario, when complete avoidance of the peak hour periods is not possible.

Additionally, as also indicated above, there are no feasible mitigation measure to address the cumulatively considerable significant construction traffic impact at Century Boulevard and Sepulveda Boulevard (Intersection #5), which would only occur if/when construction activities require a swing shift (i.e., 11:00 p.m. to 7:00 a.m.).

4.4.8 Other Measures

As indicated in Section 4.4.5, the proposed project's contribution would be cumulatively considerable at two of the significantly impacted intersections, assuming construction staging occurs at the proposed primary construction staging area, and at one of the significantly impacted intersection assuming construction staging occurs at the optional primary construction staging area. Although it was determined these impacts would be significant and unavoidable, LAWA would implement the following Standard Control Measure, which would serve to reduce construction impacts on study area intersections not significantly impacted. The individual measures were selected from a list of standard control measures developed by LAWA for projects at LAX. Only those measures that are applicable to the proposed project are identified below. Measure identifiers follow those in the standard measure; therefore, the identifiers listed are not be consecutive.

- **LAX-ST-1. Construction Traffic Management Plan.**

  Prior to initiation of construction, LAWA shall require contractors to complete a construction traffic management plan (CTMP). The CTMP shall include a description and illustrations of how the contractor will manage all construction related traffic during both peak and off-peak traffic periods.

The CTMP shall detail the haul routes, locations for variable message and other signs, construction deliveries, construction employee shift hours and parking locations, any lane striping changes and traffic signal modifications, and shuttle system operations, if any. The CTMP shall require approval of the LAWA Construction and Logistics Management (CALM) Team prior to implementation. The CALM Team approval process shall include multiple reviews addressing technical, scheduling and safety-related issues. Depending on the complexity and/or anticipated impacts to traffic flow, detailed review meetings with the contractor may be required. Contractor compliance shall be monitored throughout the project. LAWA shall require contractors to implement and comply with the following CTMP measures to reduce construction-related traffic impacts associated with projects at LAX, including:

a. Construction Deliveries – Construction deliveries requiring lane closures shall receive prior approval from the CALM Team. Construction notification of deliveries requiring lane closures shall be made in writing (a minimum of seventy-two (72) hours in advance, unless otherwise coordinated with the CALM Team prior to the required closure(s) when a 72-hour advance written notification is not feasible) in order to allow for any modifications to approved traffic detour plans. Delivery permits from all applicable local agencies shall be obtained thirty (30) days prior to any delivery requiring a lane closure, as feasible. To the extent possible, construction deliveries within the CTA requiring lane closures shall be scheduled during overnight hours (1:00 a.m. to 7:00 a.m.) to minimize impacts to Airport operations.

b. Designated Truck Delivery Hours – To the extent possible, truck deliveries of bulk materials such as aggregate, bulk cement, dirt, etc. to the project site, and hauling of material from the project site, shall be scheduled during off-peak hours to avoid the peak commuter and Airport traffic periods on designated haul routes. Peak commuter traffic periods are between 7:00 a.m. to 9:00 a.m. and 4:30 p.m. to 6:30 p.m. Monday through Friday. All deviations to these requirements shall be approved in writing by the CALM Team prior to actual site deliveries.

c. Construction Employee Shift Hours – To the extent possible, the beginning and ending times of work shifts that avoid peak commuter traffic periods (7:00 a.m. to 9:00 a.m. and 4:30 p.m. to 6:30 p.m. Monday through Friday) shall be established. (This measure may not apply to swing shifts.) To avoid peak commuter traffic, work periods may be extended to include weekend and multiple work shifts, when necessary.

d. Designated Truck Routes – For dirt, aggregate, bulk cement, and all other materials and equipment, truck deliveries to the LAX area shall be on designated routes only (freeways and non-residential streets). Designated truck routes shall be limited to:

1. Aviation Boulevard (Imperial Highway to Manchester Boulevard)
2. Manchester Boulevard (Aviation Boulevard to I-405)
3. Florence Avenue (Aviation Boulevard to I-405);
4. La Cienega Boulevard (north of Imperial Highway);
5. Pershing Drive (Westchester Parkway to Imperial Highway);
6. Westchester Parkway (Pershing Drive to Sepulveda Boulevard)
7. Century Boulevard (Sepulveda Boulevard to Aviation Boulevard)
8. Sepulveda Boulevard (Westchester Parkway to Imperial Highway)
9. Imperial Highway (Pershing Drive to I-405);
10. I-405; and
11. I-105.

f. Stockpile Locations – All stockpile locations shall be pre-approved by LAWA and its CALM Team. Stockpile locations/laydown/staging areas shall be accessed by construction vehicles with minimal disruption to adjacent public streets.

g. Construction Employee Parking Locations – If parking for construction employees is not located on, or in proximity to, the work site, shuttle buses to transport employees to the

construction areas shall be provided. The shuttle buses shall operate from the designated employee parking area to the work site. Shuttle buses shall comply with all applicable California Air Resources Board (CARB) and South Coast Air Quality Management District (SCAQMD) rules and regulations, and LAWA's Alternative Fuel Policy. All employees, including those of subcontractors and suppliers at all tiers, shall park in the designated parking locations and not on city streets, or in nearby neighborhoods. All construction personnel shall be required to attend an airport project-specific orientation meeting that will cover where to park, where staging areas are located, construction policies, etc.

5. ALTERNATIVES

5.1 Introduction

Section 15126.6 of the State California Environmental Quality Act (CEQA) Guidelines require that an Environmental Impact Report (EIR) include a discussion of a reasonable range of project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Within that context, this chapter discusses alternatives to the proposed project.

Key provisions of the State CEQA Guidelines on alternatives (Section 15126.6(a) through (f)) are excerpted below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- "An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible[270] alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible (15126.6(a))."
- "…the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly (15126.6(b)).
- "The specific alternative of 'no project' shall also be evaluated along with its impact" (15126.6(e)(1)). "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6(e)(2)).
- "The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (15126.6(f)).
- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries,…and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6(f)(1)).
- For alternative locations, "[o]nly locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR" (15126.6(f)(2)(A)).
- "If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location" (15126.6(f)(2)(B)).

[270] "Feasible" means capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. (State CEQA Guidelines Section 15364).

- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (15126.6(f)(3)).

The following sections discuss the significant impacts of the proposed project as identified in Chapter 4, *Environmental Impact Analysis*, the objectives of the proposed project, alternatives considered but rejected, and alternatives carried forward for further consideration in this EIR, and environmental impacts of such alternatives, including discussion as to whether such alternatives would avoid or substantially lessen any of the significant environmental impacts associated with the proposed project. Also included in this chapter is identification of the environmentally superior alternative.

5.2 Significant Impacts of the Project

The alternatives in this chapter have been selected to evaluate means for avoiding or substantially lessening the significant impacts of the proposed project identified in Chapter 4, *Environmental Impact Analysis*. As summarized in Table 1-1 in Chapter 1, *Introduction and Executive Summary*, impacts related to cultural resources (archaeological and paleontological resources) were determined to be less than significant with incorporation of mitigation measures. As described in Section 4.1.1, Air Quality, the proposed project would result in a net increase in temporary emissions of nitrogen oxides (NOx) associated with construction-related activities that represents a significant and unavoidable impact after implementation of mitigation measures and no other feasible mitigation measures were identified. As described in Section 4.4, *Construction Surface Transportation*, the proposed project would have a cumulatively considerable significant impact at two intersections (Imperial Highway and I-105 Ramp [Intersection #14], and Century Boulevard and Sepulveda Boulevard [Intersection #5]), assuming construction staging occurs at the proposed primary construction staging area. There are no feasible mitigation measures available to address the cumulatively considerable significant construction traffic impact at Imperial Highway and I-105 Ramp (Intersection #14) and Century Boulevard and Sepulveda Boulevard (Intersection #5). Therefore, the impacts at these intersections would be significant and unavoidable.

5.3 Project Objectives

As identified in the State CEQA Guidelines, the achievement of project objectives was considered in determining potentially feasible alternatives that would avoid or substantially lessen any significant effects of the proposed project.

The underlying purposes of improvements to the facilities at T2 and T3 are to provide improved security, passenger experience, operations, convenience, and quality of service. The specific objectives of the proposed project are to:

- Meet Transportation Security Administration (TSA) and U.S. Customs and Border Protection (CBP) requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security;
- Modernize and revitalize existing T2 and T3 (including the apron area) in order to improve passenger level of service and amenities within the terminals and improve building systems, as has been previously done for other terminals within the CTA;
- Coordinate improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3 to be compatible with proposed changes to the T2 and T3 buildings and anticipated airline fleets and uses;
- Enhance the interior and exterior of the terminals to benefit the overall appearance of the CTA;
- Provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once; and

- Provide for improvements within each terminal (T2 and T3) that are common to the functions and operations of both terminals and therefore can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service by reducing redundancies in passenger and baggage processing by providing facilities that support multiple terminals, when feasible.

5.4 Alternatives Considered and Rejected

5.4.1 Construction Phasing Alternative

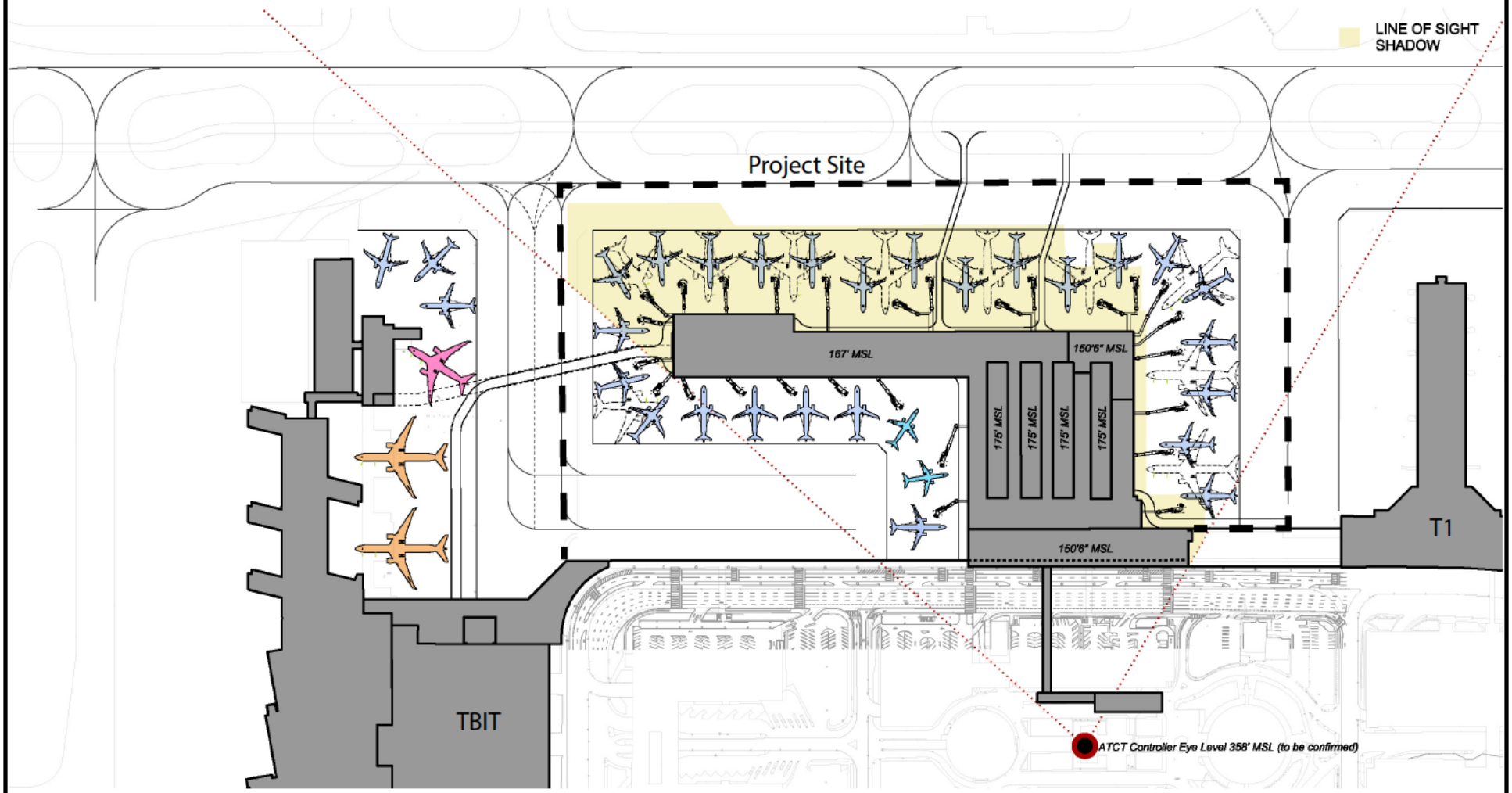
In order to reduce construction-related air pollutant emissions to a less than significant level (i.e., reduce the proposed project's 257 pounds per day of peak daily construction-related NOx emissions, shown in Table 4.1.1-6, to less than the significance threshold of 100 pounds per day), the phasing of the proposed project would be greatly extended from the currently proposed 76 months (six years, four months) to over 195 months (16+ years) by reducing the daily construction activity levels by a factor of more than 2.57 (i.e., reduce the typical 8-hour daily construction work shifts to approximately 3-hour daily work shifts) (Appendix B.3). The extended phasing and construction approach was initially considered with regard to short-term air quality impacts associated with the proposed project. While this alternative would reduce daily emissions, it would increase the overall duration of air pollutant emissions. Additionally, this alternative would have substantially increased costs and would delay achievement of the project objectives and benefits. Therefore, this alternative was determined to be infeasible and was not carried forward for full evaluation.

5.4.2 Alternative Terminal Configuration

One alternative considered consists of an alternative terminal configuration that would reduce the total duration of construction by approximately 12 months (one year) compared to that of the proposed project. As shown on **Figure 5-1**, under this alternative configuration, the existing T3 terminal and concourse, including the satellite, would be demolished and not rebuilt. Instead, the existing T2 concourse would be demolished and rebuilt with an expanded footprint, extending westward to provide new terminal area, and a new linear concourse would be constructed at the north end, extending from the new T2 terminal west to where the T3 satellite concourse was formerly located. Overall, this alternative terminal configuration would have a smaller footprint than the existing T2 and T3. The new linear concourse would be parallel to Taxiway D with aircraft parking positions along the north side of the concourse being perpendicular to the Taxiway D.

This alternative would meet all the project objectives and would take less time overall (approximately one year) to build. It is likely that the intensity of daily construction activities would be comparable to those of the proposed project, even though the overall duration of construction would be comparatively less; consequently, it is likely that this alternative would not avoid the significant daily air quality impact or the cumulatively considerable significant construction traffic impact that would occur with the proposed project. In addition, operation of this alternative terminal configuration would require aircraft departing from the north side of the new concourse to be pushed back onto Taxiway D, which would interfere with aircraft taxi flows in that area and could pose a line-of-sight problem for the Air Traffic Control Tower (ATCT), with the visibility of aircraft pushing back from the gates and aircraft movements along Taxiway D being blocked or obscured by the new T2 terminal building and/or the new T2 concourse structure. Preliminary discussions with FAA and the ATCT[271] determined that the potential impacts on aircraft taxi flows on Taxiway D and line-of-sight would be unacceptable, and make this alternative infeasible. For this reason, and because it would not avoid or substantially lessen the proposed project's significant and unavoidable impacts, this alternative was not carried forward for full evaluation.

[271] Jeff Cunnyngham, FAA LAX Tower Operations Manager, email to David Vogt, Delta: Subject: New DAL Gate Plan for Terminal 2 and 3, November 25, 2016.



Source: Delta Airlines, 2016.
Prepared by: CDM Smith, January 2017.

Note: For discussion purposes only. Actual development and placement details may vary.

LAX Terminals 2 and 3 Modernization Project	Alternative Terminal Configuration	Figure 5-1

5.4.3 Other LAX Sites

In this alternative, construction of a new concourse, Concourse 0[272] for example, as an alternative to the T2/T3 Modernization Project was considered. Because it is likely that the intensity of daily construction activities would be comparable to those of the proposed project, this alternative would not avoid or substantially lessen the significant air quality impacts of the proposed project or avoid the cumulatively considerable significant construction traffic impact (i.e., construction of a new concourse would still involve major construction activities), nor would it meet any of the project objectives described above in Section 5.3. As no improvements would occur at T2 and T3 under this alternative, no flexible space for next generation passenger and baggage security screening functions to improve safety and security would be provided at T2 and T3, no modernization and revitalization of the existing T2 and T3 (including the apron area), or improvement of passenger level of service or amenities at T2 and T3 would occur, no secure corridor between T2 and T3 would be provided, and no operational efficiencies at T2 and T3 would occur. As such, this alternative was not carried forward for full evaluation.

5.5 Alternatives Carried Forward for Further Consideration

The alternatives to the proposed project were formulated in an attempt to avoid or substantially lessen the significant impacts of the project. As required by CEQA, a "no project" alternative is also addressed in this section. The no-project alternative was evaluated under two scenarios: 1) a No Project-No Build (Alternative 1), that represents conditions that would occur if the project site would retain the existing physical conditions with future regional growth occurring, such as changes in operations at LAX, and; 2) a No Project-Limited Interior Improvements Only (Alternative 2), which represents the improvements reasonably expected to occur in the foreseeable future if the proposed project was not approved, such as tenant and infrastructure improvements within the existing building footprints.

An additional alternative presented in this section is a Reduced-Scale Project (Alternative 3). The Reduced-Scale Project Alternative was selected to evaluate means for reducing the magnitude of the significant impacts that would occur under the proposed project.

The alternatives evaluated in this chapter are described below and evaluated in Section 5.6, Evaluation of Project Alternatives.

5.5.1 Alternative 1: No Project – No Build

Under Alternative 1, none of the proposed improvements under the proposed project would occur. The project site would retain the existing physical conditions and the existing terminals would continue to operate as they do today, with future projected passenger growth occurring. The project site is currently developed with approximately 788,018 square feet of existing structures (not including the apron area) which would remain. Further, under Alternative 1, no new infrastructure or other site improvements at T2 and T3 would occur.

5.5.2 Alternative 2: No Project – Limited Interior Improvements Only

Under Alternative 2, the airline terminal operations would continue and T2 and T3 would undergo improvements reasonably expected to occur in the foreseeable future if the proposed project is not approved. Such improvements could include updating the interior infrastructure (i.e., minor amounts of interior and building system renovations) and tenant improvements (i.e., signage, wiring for technology,

[272] As described in Table 3-1 in Chapter 3, *Overview of Project Setting,* Concourse 0 would be constructed to the east of Terminal 1, in the current location of the Park One surface parking lot. Concourse 0 would provide up to 660,000 square feet of floor space, including 11 aircraft gates.

modifications to layout of holding areas, etc.), all within the existing building footprints. To the extent that remodeling of interior spaces could occur to accommodate changes in security requirements, this would be reasonably expected to occur under this alternative. The amount of square footage at the project site would remain at 788,018 square feet (not including the apron area).

5.5.3 Alternative 3: Reduced-Scale Project

Under Alternative 3, only certain elements of the proposed project would be implemented, resulting in a reduced-scale project. In particular, Alternative 3 would modernize T3, including updates to the interior and exterior of the terminal, the building systems, and some enhancements to amenities and operations within the terminal; however, only very limited improvements would be made at T2. The following elements that are included in the proposed project would be implemented under Alternative 3:

- The T3 existing ticketing building would be completely demolished and rebuilt. The new ticketing building would be constructed in the existing area of the T3 ticketing building, and would extend towards the Tom Bradley International Terminal (TBIT) in the paved open area to the southwest of T3. Additionally, the eastern portion of the existing T3 ticketing building would be extended into the western portion of the T2 existing ticketing building.
- The T3 existing concourse building would be completely demolished and rebuilt. The southern appendages to the T3 satellite would be demolished. The new T3 concourse would be wider than the existing concourse.
- The Security Screening Checkpoint (SSCP) at T3 would be reconfigured in the new space created by reconstructing the ticketing building and concourse.
- A Secure T2/T3 Connector would be built to connect the concourses; however, the design of this connector under Alternative 3 would eliminate the office level at the T2 ticketing building.
- The T2 Federal Inspection Station (FIS) would be renovated (interior renovation only).

As the Alternative 3 elements focus primarily on T3 (the oldest of the two terminals), as well as providing security and customs screening to improve safety and security, the elements that are included in the proposed project but would not be implemented under Alternative 3 are as follows:

- Demolishing and rebuilding the T2 ticketing building (and the associated additional square footage)
- T2 apron work and passenger boarding bridges
- T3 Control Center
- Consolidated Checked Baggage Inspection Systems (CBIS) for T2 and T3
- Consolidated SSCP for T2 and T3

As shown on **Table 5-1**, the Reduced-Scale Project Alternative would include approximately 170,000 square feet of renovation to existing building area and the addition of approximately 400,000 square feet of new building area for a total of approximately 1,200,000 square feet of building area. This would represent a building area reduction of approximately 25 percent compared to the proposed project, which proposes a total of approximately 1,600,000 square feet of building area.

Table 5-1
Alternative 3: Reduced-Scale Project Total Building Area

Facility		Existing Area (square feet - sf)	Existing Area Renovation (sf)	Existing Area Demolition (sf)	Existing Area Rebuild (sf)	New Construction (sf)	Total Area (sf)
T2.5 Ticketing Building	Mechanical Space	0	0	0	0	5,000	5,000
	Office Level	2,725	0	0	0	0	2,725
	SSCP/Office	40,123	0	-6,378	6,378	0	40,123
	Ticketing Level	89,210	0	-23,095	23,095	12,405	101,615
	Arrivals Level	91,107	0	-29,911	29,911	25,089	116,196
	Total	**223,165**	**0**	**-59,384**	**59,384**	**42,494**	**265,659**
Terminal 2 Concourse Building	Mechanical Space	0	0	0	0	0	0
	Lounge Level	36,727	0	0	0	0	36,727
	Concourse Level	86,048	0	0	0	0	86,048
	Ramp Level	84,130	0	0	0	0	84,130
	FIS Level	87,796	42,400	0	0	0	87,796
	Total	**294,701**	**42,400**	**0**	**0**	**0**	**294,701**
T2/T3 Secure Connector	1,000 linear feet from T2 Centerline to T3 Centerline X 35' wide	0	0	0	0	35,000	35,000
	Total	0	0			**35,000**	**35,000**
Terminal 3 Concourse Building	Control Center	0	0	0	0	0	0
	Mechanical Space	0	0	0	0	15,000	15,000
	Lounge Level	15,164	0	0	0	47,336	62,500
	Concourse Level	96,744	58,394	-38,350	38,350	28,256	125,000
	Ramp Level	95,435	46,537	-48,898	48,898	29,565	125,000
	Tunnel Level	23,800	23,800	0	0	0	23,800
	Total	**231,143**	**128,731**	**-87,248**	**87,248**	**120,157**	**351,300**
Terminal 3.5 Ticketing Building	Mechanical Space	0	0	0	0	12,000	12,000
	Office Level	0	0	0	0	45,000	45,000
	SSCP/Office Level	0	0	0	0	45,000	45,000
	Ticketing Level	16,779	0	-16,779	16,779	53,221	70,000
	Arrivals Level	22,230	0	-22,230	22,230	37,770	60,000
	Total	**39,009**	**0**	**-39,009**	**39,009**	**192,991**	**232,000**
Grand Total		**788,018**	**171,131**	**-185,641**	**185,641**	**390,642**	**1,178,660**

Source: LAWA and CDM Smith, 2017

5.6 Evaluation of Project Alternatives

5.6.1 Alternative 1: No Project – No Build

5.6.1.1 Environmental Impact Evaluation

Air Quality

Under Alternative 1, no physical changes would occur at the project site and the current operation of the airline terminals would continue. With respect to construction air pollutant emissions, Alternative 1 would not involve any construction, and thus, it would avoid the significant unavoidable impact that would occur under the proposed project with respect to construction-related regional emissions of NOx. Because the proposed project includes an increase in operational square footage, operational energy-related air pollutant emissions were evaluated and impacts were determined to be less than significant. Under Alternative 1, there would be no replacement of older less energy efficient fixtures and appliances with those that are newer and more energy efficient; however, Alternative 1 would not increase the terminal square footage. Thus, operational air pollutant emissions under Alternative 1 would be less than operational air pollutant emissions under the proposed project. Therefore, Alternative 1 would avoid the significant unavoidable impact associated with construction air pollutant emissions that would occur under the proposed project and would have reduced operational air pollutant emissions, and thus, Alternative 1 would have less overall impact than the proposed project on air quality.

Human Health Risk

As discussed in Section 4.1.2, Human Health Risk Assessment, the Human Health Risk Assessment (HHRA) conducted for the proposed project addresses construction-related toxic air contaminants (TAC) emissions and determined that the proposed project would have a less than significant impact with respect to human health risk. Because no construction would occur under Alternative 1, this alternative would not result in any increase in TAC emissions associated with construction activities and thus would have no health risk impact associated with construction. Therefore, there would be no change in localized TAC emissions at the project site and no impact would occur. Impacts under Alternative 1 would be less than the proposed project.

Greenhouse Gas Emissions

Under Alternative 1, no physical changes would occur at the project site and the current operation of the airline terminals would continue. As discussed in Section 4.2, *Greenhouse Gas Emissions*, the proposed project would have a less than significant impact relative to greenhouse gas (GHG) emissions during the proposed project's construction and operation. As Alternative 1 entirely avoids the proposed project's construction GHG emissions, it would avoid the short-term GHG emissions that would occur under the proposed project with respect to construction-related GHG emissions. Relative to operations, while under Alternative 1, there would be no replacement of older less energy efficient fixtures and appliances with those that are newer and more energy efficient, no increase the terminal square footage would occur. Therefore, operational GHG emissions under Alternative 1 would be slightly less than operational GHG emissions under the proposed project. Thus, Alternative 1 would have less impact than the proposed project relative to GHG emissions.

Cultural Resources

As discussed in Section 4.3, *Cultural Resources*, the proposed project would have a less than significant impact on archaeological resources and paleontological resources with incorporation of standard control measures as mitigation. Given that no construction would occur under Alternative 1, this alternative would avoid the proposed project's impacts on archaeological resources and paleontological resources. Therefore, Alternative 1 would have less impact on archaeological resources and paleontological resources than the proposed project.

Construction Surface Transportation

Alternative 1 would not involve any of the construction activities associated with the development of the proposed project. Construction traffic associated with demolition, construction of new facilities, delivery of materials and hauling, and employee trips that would be required for the construction of the proposed project would not occur. Thus, Alternative 1 would avoid the proposed project's cumulatively considerable significant construction traffic impacts at the Imperial Highway and I-105 Ramp (Intersection #14) and Century Boulevard and Sepulveda Boulevard (Intersection #5). Therefore, as Alternative 1 entirely avoids the proposed project's construction traffic impacts, it would have less impact than the proposed project on traffic conditions in the area.

Energy

Alternative 1 would not involve construction; therefore, no energy impacts from construction would occur. However, because no modernization of the infrastructure or building systems would occur under Alternative 1, the terminals would not comply with current state water and energy efficiency standards and regulations; therefore, although total energy demands would be less due to less building space, energy conservation would also be less when compared to the proposed project.

5.6.1.2 Relationship of Alternative 1: No Project – No Build to Proposed Project Objectives

Alternative 1 would not result in the modernization of T2 and T3 and associated apron, thereby not improving security or the quality of service and customer experience provided to passengers. As no development would occur and the physical conditions associated with the site and its activities would remain essentially the same as under current conditions, Alternative 1 would not meet any of the proposed project's objectives listed above under Section 5.3. Specifically, Alternative 1 would not meet the proposed project's objective to meet TSA and CBP requirements for security and customs screening or provide flexible space for next generation passenger and baggage security screening functions to improve safety and security. Further, Alternative 1 would not improve passenger level of service and amenities, or improve buildings systems and aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations), nor improve the interior and exterior appearance. It would not provide a secure connector between T2 and T3 or provide for the shared functions between terminals to improve efficiency, flexibility, and enhance customer service.

5.6.2 Alternative 2: No Project – Limited Interior Improvements Only

5.6.2.1 Environmental Impact Evaluation

Air Quality

Under Alternative 2, only limited physical changes within the building footprint would occur at the project site and the current operation of the airline terminals would continue. With respect to construction air pollutant emissions, Alternative 2 would involve only interior construction within the building footprint. Given the limited amount of construction that would occur, which would primarily involve interior improvements that do not require much, if any, large heavy-duty diesel-powered construction equipment, Alternative 2 would avoid the significant unavoidable impact that would occur under the proposed project with respect to construction-related regional emissions of NOx. Relative to operations, no increase in square footage would occur under Alternative 2 and therefore, energy-related air pollutant emissions would be less than the proposed project. Further, the interior improvements would likely include replacement of older less energy efficient appliances and fixtures with those that are newer and more energy efficient. Thus, operational air pollutant emissions under Alternative 2 would be less than operational air pollutant emissions under the proposed project. Therefore, Alternative 2 would avoid the significant unavoidable impact that would occur under the proposed project associated with construction air pollutant emissions and would

have reduced operational air pollutant emissions, and thus, Alternative 2 would have less overall impact than the proposed project on air quality.

Human Health Risk

As discussed in Section 4.1.2, Human Health Risk Assessment, the HHRA conducted for the proposed project addresses construction-related TAC emissions and determined that the proposed project would have a less than significant impact with respect to human health risk. Because only limited interior construction would occur under Alternative 2, this alternative would result in a smaller increase in TAC emissions associated with construction activities as compared to the proposed project. Therefore, no significant impacts would occur and impacts under Alternative 2 would be less than the proposed project.

Greenhouse Gas Emissions

Under Alternative 2, only limited physical changes within the building footprint would occur at the project site and the current operation of the airline terminals would continue. As discussed in Section 4.2, *Greenhouse Gas Emissions*, the proposed project would have a less than significant impact relative to GHG emissions during the proposed project's construction and operation. However, as Alternative 2 involves only a limited amount of interior construction, it would have reduced short-term GHG emissions than would occur under the proposed project with respect to construction-related GHG emissions. Relative to operations, no increase in square footage would occur under Alternative 2 and therefore, energy-related GHG emissions would be less than the proposed project. Further, the interior improvements would likely include replacement of older less energy efficient appliances and fixtures with those that are newer and more energy efficient. Thus, operational GHG emissions under Alternative 2 would be less than operational GHG emissions under the proposed project. Therefore, GHG emissions under Alternative 2 would be less than the proposed project.

Cultural Resources

As discussed in Section 4.3, *Cultural Resources*, the proposed project would have a less than significant impact on archaeological resources and paleontological resources with incorporation of standard control measures as mitigation. Given that only interior construction would occur under Alternative 2, this alternative would avoid the proposed project's impacts on archaeological resources and paleontological resources. Therefore, Alternative 2 would have less impact on archaeological resources and paleontological resources than the proposed project.

Construction Surface Transportation

Alternative 2 would involve only limited construction activities associated with interior improvements. Therefore, construction traffic would be greatly reduced as compared to the proposed project (i.e., traffic associated with demolition and construction of new square footage facilities would not occur, and the number of traffic trips for delivery of materials, hauling, and construction employee trips would be substantially reduced). Thus, Alternative 2 would avoid the proposed project's cumulatively considerable significant construction traffic impacts at the Imperial Highway and I-105 Ramp (Intersection #14) and Century Boulevard and Sepulveda Boulevard (Intersection #5). Therefore, as Alternative 2 would have reduced construction traffic impacts, it would have less impact than the proposed project on existing traffic conditions in the area.

Energy

Alternative 2 would have limited construction; therefore, energy impacts would be less than the proposed project. Because of the limited amount of modernization that could occur under Alternative 2, the terminals would not comply with current state water and energy efficiency standards and regulations; therefore, although total energy demands would be less due to less building space, energy conservation would also be less when compared to the proposed project.

5.6.2.2 Relationship of Alternative 2: No Project – Limited Interior Improvements Only to Proposed Project Objectives

As only limited interior improvements would occur, Alternative 2 would not result in improvements to safety and security to meet long-term TSA and CBP security and customs screening (such as space enough to provide next generation passenger and baggage security screening functions), nor the modernization of T2 and T3 and associated apron. Although limited interior improvements within existing footprints of T2 and T3 could provide minimal improvements in level of service, amenities, and building systems, these improvements would not be sufficient to significantly upgrade the building and building systems, both of which are at or beyond their useful lives. In addition, although limited interior improvements would occur, no improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) or exterior improvements would occur, and no benefit to the overall appearance of the CTA would occur. Finally, under Alternative 2 there would be no opportunity to provide a secure connector between T2 and T3 nor would there be the opportunity for shared functions between the two terminals to improve efficiency, flexibility, and enhance customer service. Therefore, Alternative 2 would not meet the project objectives listed above under Section 5.3.

5.6.3 Alternative 3: Reduced-Scale Project

5.6.3.1 Environmental Impact Evaluation

Air Quality

Under Alternative 3, total construction air pollutant emissions and the duration of impacts associated with these emissions would be less than the proposed project given the reduced amount of demolition and construction that would occur. However, although implementation of Alternative 3 would result in less development, it is likely that this alternative would still result in similar maximum daily emissions given that the intensity of construction activity would likely remain the same (i.e., the reduced development could reduce the overall duration of development, but daily activity levels would likely be similar to those of the proposed project). As stated in Section 4.1.1, Air Quality, the thresholds of significance are based on maximum daily emissions and the proposed project would have significant construction-related impacts with respect to maximum daily regional NO_X emissions. As Alternative 3 would have a similar intensity of construction activity, this alternative would result in similar significant impacts with respect to maximum daily NO_X emissions as compared to the proposed project. Construction air pollutant emissions from this alternative would still exceed the regional daily emissions significance threshold for NO_X following implementation of the same standard control and mitigation measures implemented under the proposed Project (see Section 4.1.1, Air Quality).

With regard to operational air pollutant emissions, Alternative 3 would have approximately 25 percent less total terminal square footage than the proposed project; therefore, energy-related operational air pollutant emissions would be less than the proposed project. Further, while fewer building renovations would be implemented under Alternative 3 as compared to the proposed project, the renovations that would occur would include replacement of many of the older less energy efficient appliances and fixtures with those that are newer and more energy efficient.

Therefore, under Alternative 3, total construction-related air pollutant emissions and the duration of emissions would be reduced as compared to the proposed project (due to reduced project size and shorter construction period, compared to the proposed project), although peak daily construction air pollutant emissions would be similar. Long-term operational-related air quality impacts would be reduced compared to the proposed project. Therefore, overall, this alternative would reduce air pollutant emissions as compared to the proposed project; however, peak construction air pollutant emissions from this alternative would still result in a significant and unavoidable impact as it would still exceed the daily regional significance threshold for NO_X following implementation of standard control and mitigation measures.

Human Health Risk

As discussed in Section 4.1.2, Human Health Risk Assessment, the HHRA conducted for the proposed project addresses construction-related TAC emissions and determined that the proposed project would have a less than significant impact with respect to human health risk. Because less construction would occur under Alternative 3, there would be fewer days of construction activity and this alternative would result in a smaller increase in TAC emissions associated with construction activities as compared to the proposed project. Therefore, no significant impacts would occur, and impacts under Alternative 3 would be less than the proposed project.

Greenhouse Gas Emissions

As discussed in Section 4.2, *Greenhouse Gas Emissions*, the proposed project would have a less than significant impact relative to GHG emissions during the proposed project's construction and operation. Implementation of Alternative 3 would result in less development and fewer total construction GHG emissions. Although Alternative 3 would result in a similar intensity of construction activity, the total duration of construction would be reduced. Therefore, under this alternative, impacts related to construction GHG emissions would be less than the proposed project. Relative to operations, a smaller increase in square footage would occur under Alternative 3 than would occur under the proposed project and therefore, energy-related GHG emissions would be less than the proposed project. Further, as with the proposed project, Alternative 3 would include replacement of older less energy efficient appliances and fixtures with those that are newer and more energy efficient. Thus, operational GHG emissions under Alternative 3 would be less than operational GHG emissions under the proposed project. Therefore, under Alternative 3, construction-related GHG impacts would be less than the proposed project and long-term operational-related GHG impacts would be slightly less than the proposed project. Overall, this alternative would have a less than significant impact and less impacts than the proposed project related to GHG emissions.

Cultural Resources

Under Alternative 3, less demolition and construction would occur as compared to the proposed project, resulting in a smaller amount of ground disturbance and, thus, a lesser potential to encounter previously unknown archaeological and paleontological resources. However, as with the proposed project, since Alternative 3 would include excavations of varying depths across portions of the project site, including excavations at depths where native soils would be encountered, previously unknown buried archaeological resources and/or paleontological resources could be impacted. As with the proposed project, impacts to cultural resources would be less than significant with incorporation of standard control measures as mitigation.

Construction Surface Transportation

Similar to the proposed project, construction employee parking would occur just east of the CTA and material staging for deliveries associated with the construction of Alternative 3 would occur on either an existing industrial parcel located on La Cienega Boulevard, just north of Imperial Highway (proposed primary construction staging area) or on a portion of an existing LAWA-owned construction staging area along the south side of Westchester Parkway, east of the southern terminus of La Tijera Boulevard (optional primary construction staging area). Therefore, while there would be less construction traffic over the entire duration of construction, because Alternative 3 would involve less development, construction employee trips, material deliveries, and truck haul trips on a daily basis would likely be similar to those of the proposed project. As such, implementation of Alternative 3 would likely have a cumulatively considerable significant construction traffic impact at the Imperial Highway and I-105 Ramp (Intersection #14) and Century Boulevard and Sepulveda Boulevard (Intersection #5), similar to the proposed project.

Energy

Alternative 3 would involve less construction than the proposed project; therefore, energy impacts would be less than the proposed project. Because modernization would be focused on T3 and limited for T2, only T3 would fully comply with current state water and energy efficiency standards and regulations; therefore,

although total energy demands would be less due to less building space, energy conservation would also be less when compared to the proposed project.

5.6.3.2 Relationship of Alternative 3: Reduced-Scale Project to Proposed Project Objectives

Alternative 3 would result in some modernization of T2 and T3 and associated apron (at T3 only), thereby implementing some improvement in security and the quality of service and customer experience provided to passengers. However, the improvements would occur on a more limited basis than the proposed project and would only partially meet the project objectives presented in Section 5.3. Specifically, Alternative 3 would include improvements to meet TSA and CBP requirements for security and customs screening to improve safety and security by reconfiguring the SSCP at T3 and making interior renovations to the T2 FIS. Safety and security improvements would not be made in T2 and the CBIS and SSCP would not be consolidated for the two terminals, thereby, reducing efficient use of limited space. Alternative 3 would make some improvements to passenger level of service and amenities, as well as some improvements to buildings systems, the aircraft apron area (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) and the interior and exterior appearance at T3 only. Very limited improvements would occur at T2 which would greatly limit the opportunities and the space available for improvements to services and amenities between T2 and T3. As such, this alternative would not achieve the improvements in operational efficiency and flexibility that would occur with the proposed project, nor would it provide for the types of improvements that have been previously done for other terminals within the CTA. Alternative 3 would provide a secure connector between T2 and T3 and provide for some shared functions between terminals, however, there would not be adequate space or design to provide consolidated CBIS or SSCP for T2 and T3.

5.7 Environmentally Superior Alternative

Section 15126.6(e)(2) of the State CEQA Guidelines indicates that an analysis of alternatives to a proposed project shall identify an environmentally superior alternative among the alternatives evaluated in an EIR. The State CEQA Guidelines also state that should it be determined that the No Project Alternative is the environmentally superior alternative, the EIR shall identify another environmentally superior alternative among the remaining alternatives. With respect to identifying an environmentally superior alternative among those analyzed in this EIR, the range of alternatives includes Alternative 1: No Project – No Build, Alternative 2: No Project – Limited Interior Improvements Only, and Alternative 3: Reduced-Scale Project.

A comparative summary of the environmental impacts under each alternative with the environmental impacts associated with the proposed project is provided in **Table 5-2**. A more detailed description of the potential impacts associated with each alternative is provided above. Pursuant to Section 15126.6(c) of the State CEQA Guidelines, the analysis below addresses the ability of the alternatives to "avoid or substantially lessen one or more of the significant effects" of the project.

As discussed above, and as depicted in **Table 5-2**, the Alternative 1: No Project – No Build is considered to be the environmentally superior alternative as it would avoid all construction and operational impacts of the proposed project. However, as indicated above, this alternative would not meet any of the objectives established for the proposed project. Additionally, Alternative 2: No Project – Limited Interior Improvements would be environmentally superior to the proposed project through the reduction in significant and unavoidable construction-related air quality and surface transportation impacts, as well as reduced impacts to human health risks and GHG emissions due to less construction, no impacts to cultural resources, and reduced operational air pollutant emissions associated with energy, as further described above and summarized in **Table 5-2** below. Also, because Alternative 2 would have limited construction and reduced building space, energy impacts would be less than the proposed project. Because of the limited amount of modernization that could occur under Alternative 2, the terminals would not comply with current state water and energy efficiency standards and regulations; therefore, energy conservation would be less when compared to the proposed project.

In accordance with the State CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative, Alternative 3 – Reduced-Scale Project would be the environmentally superior alternative. Due to the reduced project size and shorter construction period, compared to the proposed project, Alternative 3 would result in a reduction in overall duration of construction related air pollutant emissions, although daily peak NOx emissions would still be significant; reduced operational air pollutant emissions associated with energy; and reduced construction related impacts to health risks, GHG emissions, cultural resources and construction surface transportation, although there would still be a cumulatively considerable significant construction traffic impact. Alternative 3 would involve less construction and building space than the proposed project; therefore, energy impacts would be less than the proposed project. Alternative 3 would also involve less modernization; therefore, energy conservation would be less when compared to the proposed project.

It is important to note, while Alternative 3 is considered the environmentally superior alternative, it would only lessen the significant impacts of the proposed project, but would not avoid the significant unavoidable impact that would occur under the proposed project with respect to construction-related regional NO_X emissions and with respect to making a cumulatively considerable significant construction traffic impact. Thus, the environmentally superior Alternative 3 would not eliminate any significant and unavoidable impacts.

While Alternative 3: Reduced-Scale Project is considered the environmentally superior alternative, it would not fully meet four of the five project objectives. It would meet the objective to provide a secure connector between T2 and T3. It would partially meet the objective to provide for TSA and CBP requirements for security and customs screening and increase the amount of flexible space for next generation passenger and baggage security screening functions, as it would provide 45,000 square feet of SSCP/Office space for security in T3, as is also the case for the proposed project; however, the amount of SSCP/Office area for security in T2 would be over 70 percent less under Alternative 3 than it would be under the proposed project (i.e., 40,123 square feet compared to 145,000 square feet – see Tables 5-1 and 2-1, respectively) and the amount of FIS area in T2 would be approximately 13 percent less under Alternative 3 than it would be under the proposed project (i.e., 87,796 square feet compared to 101,000 square feet – see Tables 5-1 and 2-1, respectively. It would partially meet the objective to modernize and revitalize existing T2 and T3 to improve passenger level of service and amenities. Although Alternative 3 would improve the aircraft apron area at T3 to be compatible with proposed changes at the T3 building and anticipated airline fleets and uses, and enhance the interior and exterior of T3, it would only partially meet the objective to enhance the interior and exterior of the terminals to the benefit of the overall appearance of the CTA as the apron area and exterior of T2 would remain unimproved. It would not meet the objective to provide improvements and functions that can be shared between terminal to improve the operational efficiency and flexibility, as well as enhance customer service.

Therefore, although the Reduced-Scale Project Alternative is the environmentally superior alternative, it would not avoid or substantially lessen the significant cumulative traffic impact. Furthermore, the Reduced-Scale Project Alternative would not fully meet most of the objectives of the proposed project.

Table 5-3 is a summary of the proposed project and project alternatives' responsiveness to the project objectives.

Table 5-2
Comparison of Impacts Associated with the Alternatives and Impacts of the Proposed Project

	Proposed Project Impact	Alternative 1 No Project-No Build	Alternative 2 No Project-Limited Interior Improvements Only	Alternative 3: Reduced-Scale Project
Air Quality				
Construction	Significant and Unavoidable	No Impact	Less Than Significant	Significant and Unavoidable
Operation (Energy)	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Health Risk Assessment				
Construction	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Greenhouse Gas Emissions				
Construction	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Operation	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant
Cultural Resources				
Construction	Less Than Significant with mitigation	No Impact	No Impact	Less Than Significant with mitigation
Construction Surface Transportation				
Construction Surface Transportation	Cumulatively Considerable (Significant and Unavoidable)	No Impact	Less Than Significant	Cumulatively Considerable (Significant and Unavoidable)
Energy Impacts and Conservation (Construction and Operation)				
Wasteful, Inefficient or Unnecessary Consumption	Less Than Significant	No Impact	Less Than Significant	Less Than Significant
Reliance on Fossil Fuels	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant

Source: CDM Smith, 2017.
Note: All the alternatives would have impacts similar to, or less than, the proposed project.

Table 5-3
Summary of Project's and Alternatives' Responsiveness to Project Objectives

	Does the Project or Alternative Meet the Objective?			
Objective	**Proposed Project**	**Alt. 1: No Project-No Build**	**Alt. 2: No Project-Limited Interior Improvements Only**	**Alt. 3: Reduced-Scale Alternative**
Meet Transportation Security Administration (TSA) and U.S. Customs and Border Protection (CBP) requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security.	Yes	No	No	Only Partially
Modernize and revitalize existing T2 and T3 (including the apron areas) in order to improve passenger level of service and amenities within the terminals and improve building systems, as has been previously done for other terminals within the CTA.	Yes	No	No	Only Partially (T3 only)
Coordinate improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3 to be compatible with proposed changes to the T2 and T3 buildings and anticipated airline fleets and uses;	Yes	No	No	Only Partially (T3 only)
Enhance the interior and exterior of the terminals to benefit the overall appearance of the CTA.	Yes	No	No	Only Partially (T3 only)
Provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once.	Yes	No	No	Yes
Provide for improvements within each terminal (T2 and T3) that are common to the functions and operations of both terminals and therefore can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service by reducing redundancies in passenger and baggage processing by providing facilities that support multiple terminals, when feasible.	Yes	No	No	No

6. OTHER ENVIRONMENTAL CONSIDERATIONS

6.1 Significant Unavoidable Impacts

Section 15126.2(b) of the State CEQA Guidelines requires that an EIR describe significant environmental impacts that cannot be avoided, including impacts that can be mitigated but not reduced to a level that is less than significant. Chapter 4 of this EIR provides detailed analyses of the environmental topics identified in the Initial Study, prepared in August 2016, as having the potential to result in significant impacts with the implementation of the proposed project. The following identifies the impacts that cannot be mitigated to a level that is less significant (although with implementation of mitigation measures the impacts would be reduced).

- **Air Quality**
  - Construction-related regional emissions of NOx
  - Cumulatively considerable significant construction-related air quality impacts, based on the proposed project's significant construction-related regional emissions of NOx
- **Construction Surface Transportation**
  - Cumulatively considerable significant construction-related surface transportation impacts at two intersections: Imperial Highway and I-105 Ramp (Intersection #14] and Century Boulevard and Sepulveda Boulevard (Intersection #5), assuming construction staging occurs at the proposed primary construction staging area

No additional feasible mitigation measures are available that would avoid these impacts or reduce them to less than significant levels.

In addition to identifying the significant unavoidable impacts of the proposed project, Section 15126.2(b) of the State CEQA Guidelines also recommends that an EIR describe the reasons why the project is being proposed, notwithstanding the significant unavoidable impacts associated with the project. As discussed in Chapter 2, *Project Description*, the specific objectives of the proposed project are to:

- Meet Transportation Security Administration (TSA) and U.S. Customs and Border Protection (CBP) requirements for security and customs screening and provide flexible space for next generation passenger and baggage security screening functions to improve safety and security;
- Modernize and revitalize existing T2 and T3 (including the apron area) in order to improve passenger level of service and amenities within the terminals and improve building systems, as has been previously done for other terminals within the CTA;
- Coordinate improvements to the aircraft apron areas (e.g., aircraft parking positions, passenger boarding bridge locations, aircraft fueling system hydrant locations, ground support equipment parking locations) at T2 and T3 to be compatible with proposed changes to the T2 and T3 buildings and anticipated airline fleets and uses;
- Enhance the interior and exterior of the terminals to benefit the overall appearance of the CTA;
- Provide a secure connector between T2 and T3 to allow passengers to connect from one terminal to the other without having to exit to the non-secure side of the terminal, and only go through security once; and
- Provide for improvements within each terminal (T2 and T3) that are common to the functions and operations of both terminals and therefore can be shared between terminals, which, in turn, would improve operational efficiency and flexibility, as well as enhance the quality of customer service by reducing redundancies in passenger and baggage processing by providing facilities that support multiple terminals, when feasible.

6.2 Significant Irreversible Environmental Changes

According to the State CEQA Guidelines, an EIR is required to evaluate significant irreversible environmental changes that would be caused by implementation of the proposed project. Specifically, as stated in Section 15126.2(c) of the State CEQA Guidelines:

"Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

The project site is already dedicated to airport uses. However, construction of the proposed project would involve the consumption of building materials during construction, such as aggregate (sand and gravel), metals (e.g., steel, copper, lead), and petrochemical construction materials (e.g., plastics). This would represent the loss of non-renewable resources, which are generally not retrievable. Aggregate resources are locally constrained, but regionally available. Their use would not have a project-specific adverse effect upon the availability of these resources.

Construction and operation of the proposed project would require energy resources such as electricity, natural gas, and various transportation-related fuels. This would represent the loss of non-renewable resources, which are generally not retrievable. See Section 6.5 below for a discussion of energy impacts and conservation.

As described in Chapter 2, *Project Description*, the proposed project would be designed and constructed to meet the City of Los Angeles Green Building Code (LAGBC) Tier 1 requirements. Certain measures of note that would reduce the use of non-renewable resources include: compliance with enhanced construction waste reduction goals; exceeding the California Energy Code requirements by 15 percent; use of plumbing fixtures and fixture fittings to reduce the overall use of potable water within the building by 20 percent; and providing readily accessible areas for the depositing, storage, and collection of non-hazardous materials for recycling. The proposed project would also comply with LAWA policies and programs related to sustainability, including LAWA's Sustainability Plan[273] discussed in Section 6.5.3.1 below, which would reduce the use of non-renewable resources and are implemented on a project-specific and on an airport-wide basis. Furthermore, energy and water conservation measures, recycling of non-hazardous materials, and other sustainable strategies would be implemented during operation of the proposed project, to the extent feasible. Therefore, the use of non-renewable resources from construction and operation of the proposed project would not result in significant irreversible changes to the environment.

6.3 Growth Inducing Impacts

Section 15126.2(d) of the State CEQA Guidelines requires an EIR to discuss the ways the proposed project could foster economic or population growth or the construction of additional housing, directly or indirectly, in the surrounding environment. Growth-inducing impacts include the removal of obstacles to population growth and the development and construction of new service facilities that could significantly affect the environment individually or cumulatively. In addition, growth must not be assumed as beneficial, detrimental, or of little significance to the environment.

6.3.1 Project Characteristics

The proposed project would enhance passenger level of service and amenities within T2 and T3; improve the efficiency of security screening, passenger and baggage processing and inspections; enhance operations; improve building systems; and modernize the interior and exterior of the terminals to benefit the

[273] City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Plan, April 2008. Available: http://www.laxsustainability.org/documents/Final_Sustainability_Plan.pdf, Accessed January 19, 2017.

overall appearance of the CTA. The proposed project would not directly or indirectly foster population growth or the construction of additional housing (see Initial Study pages 71-72). Also, as discussed in Chapter 2, *Project Description*, the proposed project would not alter the airspace traffic, runway operational characteristics, or the practical capacity of the airport; therefore, the proposed project would not increase the number of daily flights arriving and departing from LAX or the growth in aviation activity at LAX that is projected to occur in the future.

6.3.2 Economic Growth

Construction activity associated with the proposed project would directly and indirectly foster economic growth over the multi-year construction period in terms of spending by workers and the provision of goods and services in support of construction; however, the construction employment would be temporary and transitory in nature, drawing from primarily from an existing local labor pool (i.e., construction workers already living in the greater Los Angeles area transitioning from one construction project to another).

Operation of the proposed project would not induce economic growth beyond that projected to occur with natural growth in activity levels at LAX that will occur irrespective of the project. Additionally, increased employment within the Los Angeles area, inclusive of LAX, is accounted for in the employment projections of the Southern California Association of Governments, as is described in more detail in Chapter 4, *Environmental Impact Analysis*.

6.3.3 Removal of an Obstacle to Growth

As described in Chapter 2, *Project Description*, the proposed project would not alter the airspace traffic, runway operational characteristics, or the practical capacity of the airport; therefore, the proposed project would not increase the number of daily flights arriving and departing from LAX or the growth in aviation activity at LAX that is projected to occur in the future. Also, the proposed improvements to, and additional floor area proposed for, T2 and T3 would also not increase operations nor passenger volumes beyond what would occur without the project. In addition, the proposed project would not provide new access to an area that is undeveloped since the project site is located within an area of the airport, the CTA, that is in active use.

6.4 Less Than Significant Effects

This EIR concludes that construction-related air quality impacts associated with localized emissions and toxic air contaminants, climate change impacts associated with greenhouse gas emissions, and impacts on tribal cultural resources would be less than significant.

In addition, an Initial Study was prepared for the proposed project and is included as Appendix A.1 of this EIR. Based on the environmental analysis contained in the Initial Study, LAWA determined that the proposed project would result in "no impact" or a "less than significant impact" in the following subject areas:

- Aesthetics;
- Agricultural and Forestry Resources;
- Air Quality (odors);
- Biological Resources;
- Cultural Resources (historic resources);
- Geology and Soils;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use and Planning;
- Mineral Resources;
- Noise;

- Population and Housing;
- Public Services;
- Recreation;
- Transportation/Traffic (operations, air traffic patterns, hazards, emergency access, alternative transportation plans and performance); and
- Utilities and Service Systems.

Since it was determined that the effects on these resource areas from the implementation of the proposed project would be "no impact" or "less than significant impact", these environmental topics were not evaluated further in this EIR. This methodology is consistent with Section 15063(c)(3) of the State CEQA Guidelines. Pursuant to Section 15128 of the State CEQA Guidelines, the various possible project effects found not to be significant are discussed in the Initial Study. No additional potentially significant impacts were identified during the circulation of the Notice of Preparation for public and agency comments.

6.5 Energy Impacts and Conservation

6.5.1 Introduction

CEQA Guidelines Appendix F requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing wasteful, inefficient, and unnecessary consumption of energy. It provides lists of energy impacts and conservation measures that may be applicable and relevant to particular projects.

In addition, Public Resources Code Section 21100(b)(3) states that an EIR shall include "mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, and unnecessary consumption of energy." Similarly, CEQA Guidelines Section 15126.4(a)(1)(C) states that "Energy conservation measures, as well as other appropriate mitigation measures, shall be discussed when relevant."

The following additional information is provided about the proposed project's energy consumption and energy efficiency measures.

6.5.2 Energy Demand

Short-term energy demand would result from construction of the proposed project. This would include energy demand from worker, vendor, and haul vehicle trips as well as construction equipment usage. Long-term energy demand would result from operation of the proposed project. This would include energy demand from electricity and natural gas usage as well as energy demand related to the consumption of water and the treatment of wastewater.

6.5.2.1 Construction Activities

Worker, Vendor, and Haul Vehicle Trips

Worker, vendor and haul trips have been estimated based on the construction schedule assumptions used in the preparation of the project air quality and greenhouse gas impacts analyses. Construction could commence as early as fourth quarter 2017 and is projected to end in late-2023. Vendor trips are based on construction vendor trip data provided by either CalEEMod[274] defaults or project specific information, or developed, based on the Midfield Satellite Concourse (MSC) project.[275] Fuel consumption from worker and vendor trips are estimated by converting the total carbon dioxide (CO_2) emissions from each phase of

[274] California Air Resources Board, California Emissions Estimator Model, Version 2013.2.2, Available: http://www.caleemod.com/, accessed November 12, 2015.

[275] City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse (MSC), (SCH 2013021020), June 2014. Available: http://www.lawa.org/MSCNorth/Index.aspx, Accessed January 19, 2017.

construction to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.91 kilograms (kg) CO_2 per gallon (kg CO_2/gal) and the conversion factor for diesel is 10.15 kg CO_2/gal.[276] Worker vehicles are assumed to be gasoline and vendor/hauling vehicles are assumed to be diesel.

Calculations for total worker, vendor, and hauler fuel consumption are provided in **Table 6-1**, **Table 6-2**, and **Table 6-3**. Total gasoline consumption from worker trips is estimated to be 589,225 gallons and total diesel consumption from construction-related truck deliveries and hauls combined is estimated at 202,169 gallons.

Table 6-1
Construction Worker Gasoline Demand

Phase	Trips	Trip Length (miles)	CO_2 Worker Trips (MT)	kg CO_2/Gal	Gallons of Gasoline
Airside Civil/Apron Work	5,186	40	147	8.91	16,498
Terminal 3 BHS Sprung Building	310	40	45	8.91	5,050
Terminal 3 Concourse	7,166	40	640	8.91	71,829
Terminal 2 & 3 Headhouse	5,267	40	2,196	8.91	246,465
Terminal 2 Concourse	5,785	40	834	8.91	93,603
Terminal 3 North (Satellite)	1,984	40	386	8.91	43,322
Terminal 3.5 Headhouse	3,705	40	1,002	8.91	112,458
Total			**5,250**	**8.91**	**589,225**

Source: CDM Smith, January 2017.
Notes:
Trips are round trips

Abbreviations:
kg.– kilogram
CO_2 – carbon dioxide
MT – metric tons
Gal - gallons
BHS- Baggage Handling System

276 U.S. Energy Information Administration, Voluntary Reporting of Greenhouse Gases Program, Available: http://www.eia.gov/oiaf/1605/coefficients.html, Accessed January 19, 2017.

Table 6-2
Construction Off-Site Deliveries and Hauling Demand

Phase	Trips	Trip Length (miles)	CO_2 Off-Site Deliveries & Hauling (MT)	kg CO_2/Gal	Gallons of Diesel
Airside Civil/Apron Work	42,931	40	507	10.15	49,951
Terminal 3 BHS Sprung Building	50	40	3	10.15	296
Terminal 3 Concourse	1,665	40	49	10.15	4,828
Terminal 2 & 3 Headhouse	4,496	40	153	10.15	15,074
Terminal 2 Concourse	175	40	12	10.15	1,182
Terminal 3 North (Satellite)	340	40	21	10.15	2,069
Terminal 3.5 Headhouse	1,426	40	44	10.15	4,335
Total			**789**	**10.15**	**77,735**

Source: CDM Smith, January 2017.
Notes:
Trips are round trips

Abbreviations:
kg.– kilogram
CO_2 – carbon dioxide
MT – metric tons
Gal - gallons
BHS- Baggage Handling System

Table 6-3
Construction On-Site Deliveries and Hauling Demand

Phase	Trips	Trip Length (miles)	CO_2 On-Site Deliveries & Hauling (MT)	kg CO_2/Gal	Gallons of Diesel
Airside Civil/Apron Work	42,931	16.5*	1,086	10.15	106,995
Terminal 3 BHS Sprung Building	50	16.5*	1	10.15	99
Terminal 3 Concourse	1,665	16.5*	37	10.15	3,645
Terminal 2 & 3 Headhouse	4,496	16.5*	100	10.15	9,852
Terminal 2 Concourse	175	16.5*	3	10.15	296
Terminal 3 North (Satellite)	340	16.5*	7	10.15	690
Terminal 3.5 Headhouse	1,426	16.5*	29	10.15	2,857
Total			**1,263**	**10.15**	**124,434**

Source: CDM Smith, January 2017.
Notes:
Trips are round trips
*Staging related hauling, included in these calculations, is a 11 mile round trip distance.

Abbreviations:
kg.– kilogram
CO_2 – carbon dioxide
MT – metric tons
Gal - gallons
BHS- Baggage Handling System

Construction Equipment Usage

Diesel fuel consumption by construction equipment has been estimated based on the construction schedule and equipment usage assumptions used in the preparation of the project air quality and greenhouse gas analysis. Fuel usage is estimated by converting the total CO_2 emissions from each construction phase using the conversion factor for CO_2 to gallons of diesel. The conversion factor for diesel is 10.15 kg/MT CO_2/gal. Construction equipment is assumed to be diesel.

Calculations for total construction equipment diesel consumption are provided in **Table 6-4**. Total diesel consumption, including both deliveries and hauling demand shown above (**Tables 6-2 and 6-3**) and equipment demand shown below (**Table 6-4**), is estimated to be 1,685,223 gallons across all construction phases.

Table 6-4
Construction Equipment Diesel Demand

Phase	Pieces of Equipment per Phase	CO_2 Off-Road Equipment (MT)	kg CO_2/Gal	Gallons of Diesel
Airside Civil/Apron Work	59	4,266	10.15	420,296
Terminal 3 BHS Sprung Building	69	66	10.15	6,502
Terminal 3 Concourse	154	2,039	10.15	200,887
Terminal 2 & 3 Headhouse	110	3,927	10.15	386,897
Terminal 2 Concourse	42	469	10.15	46,207
Terminal 3 North (Satellite)	133	1,831	10.15	180,394
Terminal 3.5 Headhouse	127	2,455	10.15	241,872
Total		**15,053**	**10.15**	**1,483,054**

Source: CDM Smith, January 2017.
Abbreviations:
kg.– kilogram
CO_2 – carbon dioxide
MT – metric tons
Gal - gallons
BHS- Baggage Handling System

6.5.2.2 Operational Activities

As discussed in Chapter 2, *Project Description*, the proposed project would not increase the number of daily flights arriving and departing from LAX that are projected to occur in the future; therefore, operational fuel demands were not quantified for this analysis. However, with the additional square footage being added to the terminals as a result of the project in combination with projected ambient growth in aviation activity at LAX, long-term energy demand differences, primarily in electrical demand and natural gas use, and water and wastewater management, would result.

The energy use calculations for the proposed project are provided in Appendix E of this EIR. The calculations for future energy demand account for current regulatory requirements pertaining to energy efficiency and conservation and the energy reducing U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Silver level of sustainability measures which would be implemented under the proposed project.

Electricity and Natural Gas Use

Electricity and natural gas would be required to provide energy to the proposed project for indoor and outdoor lighting, building cooling and heating, building appliances, and water heating. Energy demand was estimated using CalEEMod default calculations (see Appendix E). The annual direct project electricity demand would be approximately 13,516,216 kilowatt hours per year (kWhr/yr), which is an increase of 5,668,947 kWhr per year over baseline electricity demand. As noted, this represents a conservative analysis because CalEEMod defaults do not take into account 2016 building code updates. The annual direct project natural gas demand would be approximately 46,119,222 thousand British Thermal Units per year (kBTU/yr), which is an increase of 19,343,241 kBtu over existing conditions. Increases in short- and long-term energy demand under the proposed project are summarized in **Table 6-5**. Similar to how construction-related GHG emissions can be added to annual operational emissions once project construction is completed, the energy demand associated with project construction has been amortized over a 30-year period so as to integrate that energy demand with the annual operational energy demand.[277]

Table 6-5
Annual Increased Energy Demand By Source

Activity	Gasoline (gal/yr)	Diesel (gal/yr)	Natural Gas (kBTU/yr)	Electricity (kWh/yr)
Construction (Amortized over 30 Years)				
Worker	19,641	–	–	–
Vendor	–	2,591	–	–
Hauler	–	4,148	–	–
Equipment	–	49,435	–	–
Operations				
Mobile	–	–	–	–
Natural Gas	–	–	46,119,222	–
Direct Electricity	–	–	–	13,516,216
Total	19,641	56,174	46,119,222	13,516,216

Source: CDM Smith, January 2017.
Abbreviations:
gal/yr– gallons per year
kBTU/yr – British Thermal Units per year
kWh/yr – kilowatts hours per year

6.5.3 Energy Conservation

Implementation of the proposed project would replace older, less water and energy efficient structures and facilities. The modernized terminals would be required to comply with current state water and energy efficiency standards and regulations pursuant to the California Building Code (CBC), California Green Building Standards Code (CALGreen), and LAGBC that would reduce long-term energy demand. These requirements would reduce wasteful, inefficient, and unnecessary consumption of energy over the long-term. The following presents various regulations and programs applicable to the proposed project that would reduce energy demand associated with project operation. The calculations for future energy demand with implementation of the proposed project, presented in Section 6.5.2.2 above, take into account many of the requirements listed below. Additional information regarding these and other regulations and

277 As described in Section 4.2.2.1 of Section 4.2, *Greenhouse Gas Emissions*, of this EIR, GHG emissions associated with construction of the proposed project were amortized over the lifetime of the proposed project, which is assumed to be 30 years.

programs that are supportive of energy conservation through the reduction of greenhouse gas emissions is provided in Section 4.2, *Greenhouse Gas Emissions*.

6.5.3.1 Applicable Building Standards and Policies

California Green Buildings Standards Code

Adopted in 2010, and updated annually, CALGreen is found in Part 11, Title 24 of the CCR. The purpose of CALGreen is to reduce GHG emissions; promote environmentally responsible, cost effective, healthier places to live and work; and reduce energy and water consumption. As with Energy Efficiency Standards discussed below, CALGreen identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings. Relative to energy usage, CalGreen contains requirements for exterior lighting, bicycle parking, and electric vehicle charging, as well as reference to the standards of the Building Energy Efficiency Standards. The 2013 California Green Building Standards Code (24 CCR Part 11, CalGREEN) took effect January 1, 2014. The Green Building Standards, as updated (2016), require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. They also require separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

Green LA

In May 2007, the City of Los Angeles introduced Green LA – An Action Plan to Lead the Nation in Fighting Global Warming (Green LA).[278] Green LA presents a framework targeted to reduce the City's GHG emissions by 35 percent below 1990 levels by 2030. The plan calls for an increase in the City's use of renewable energy to 35 percent by 2020 in combination with promoting water conservation, improving the transportation system, reducing waste generation, greening the ports and airports, creating more parks and open space, and greening the economic sector. Green LA identifies objectives and actions in various focus areas, including airports. The goal for LA's airports is to "green the airports," and the following actions are identified: 1) fully implement the Sustainability Performance Improvement Management System (discussed below); 2) develop and implement policies to meet LEED® green building rating standards in future construction; 3) improve recycling, increase use of alternative fuel sources, increase use of recycled water, increase water conservation, reduce energy needs, and reduce GHG emissions; and 4) evaluate options to reduce aircraft-related GHG emissions.[279]

Executive Directive No. 10

In July 2007, Mayor Antonio Villaraigosa issued Executive Directive No. 10 regarding environmental stewardship practices. Consistent with the goal specified in Green LA to make the City of Los Angeles a worldwide leader in green buildings, Executive Directive No. 10 requires that City departments, including LAWA, create and adopt a "Statement of Sustainable Building Policies," which should encompass sustainable design, energy and atmosphere, materials, and resources, water efficiency, landscaping, and transportation resources. In addition, City departments and offices must create and adopt sustainability plans that include all the policies, procedures, programs, and policies that are designed to improve internal environmental efficiency. Finally, City departments are required to submit annual sustainability reports to the Mayor for review.[280] Climate LA, discussed below, which was adopted subsequent to Executive

---

278 City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, May 2007, Available: http://environmentla.org/pdf/GreenLA_CAP_2007.pdf, Accessed January 19, 2017.

279 City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, May 2007, Available: http://environmentla.org/pdf/GreenLA_CAP_2007.pdf, Accessed January 19, 2017.

280 City of Los Angeles, Antonio R. Villaraigosa, Mayor, Executive Directive No. 10, Subject: Sustainable Practices in the City of Los Angeles, July 18, 2007.

Directive No. 10 also includes the goals supportive of green building and energy efficiency through building design and retrofits.

City of Los Angeles Green Building Code (LAGBC)

In December 2013, the Los Angeles City Council approved Ordinance No. 182,849, which updated Chapter IX of the Los Angeles Municipal Code (LAMC) by amending certain provisions of Article 9 to incorporate by reference portions of the 2013 CALGreen Code and also added other miscellaneous conservation-related measures to the LAGBC for residential and non-residential development. The requirements of the adopted LAGBC, as updated (2016), apply to new building construction, building renovations, and building additions within the City of Los Angeles. Specific mandatory requirements and elective measures are provided for three categories: (1) low-rise residential buildings; (2) nonresidential and high-rise residential buildings; and (3) additions and alterations to nonresidential and high-rise residential buildings. The Los Angeles Green Building Code Tier 1 standards, which are applicable to all projects with a LADBS permit-valuation over $200,000, require the proposed project to implement a number of measures that would reduce criteria pollutant and GHG emissions. These include measures similar to: reduce vehicle and equipment idling times; comply with Tier 4 emission standards for non-road diesel equipment; retrofit existing diesel equipment with particulate filters and oxidation catalysts; replace aging equipment with new low-emission models; and consider the use of alternative fuels for construction equipment.

Key measures in the LAGBC related to energy use and GHG emissions that apply to nonresidential buildings include, but are not limited to the following:

- Transportation Demand – Designated parking for any combination of low emitting, fuel-efficient, and carpool/vanpool vehicles shall be provided.
- Energy Conservation – Electric vehicle supply wiring for a minimum of 7 percent of the total number of parking spaces shall be provided.
- Energy Conservation – Energy conservation for new buildings must meet or exceed California Energy Commission (CEC) requirements set for in the California Building Energy Efficiency Standards.
- Renewable Energy – Future access, off-grid prewiring, and space for electrical solar systems shall be provided.

All building projects in the City of Los Angeles are subject to the LAGBC, which is based on CALGreen with some modifications unique to the City of Los Angeles. The LAGBC is a code-requirement that is part of Title 24, and is enforced by the Los Angeles Department of Building and Safety (LADBS). Given that the LAGBC has replaced LEED® in the LAMC, LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier-1 conformance, to be certified by LADBS inspector during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Tier-1 refers to specific practices that are to be incorporated into projects to "achieving enhanced construction levels by incorporating additional green building measures." Should a project pose unique issues/circumstances based on the scope and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

Sustainable City pLAn

In 2014, Mayor Eric Garcetti launched LA's first-ever Sustainable City Plan ("pLAn"). The pLAn is a comprehensive and actionable policy roadmap that prepares the City for an environmentally healthy, economically prosperous, and equitable future for all. Mayor Garcetti released the pLAn in April 2015 along with a corresponding Executive Directive (ED-#5) that incorporates the pLAn into city-wide management. The framework of pLAn includes 14 chapters, each of which sets forth a vision of things to be accomplished in the next 20 years and highlighted near- and long-term outcomes. Relative to Environment, the pLAn focuses on local water, local solar, energy-efficient buildings, carbon and climate leadership, and waste and landfills. Through the pLAn Mayor Garcetti committed the City to becoming a national leader in carbon

reduction and climate action by eliminating coal from the City's energy mix, prioritizing energy efficiency, and inspiring other cities to take similar action. The Plan sets targets of reducing GHG emissions below 1990 levels by at least 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050.

LAWA Sustainability Plan and Sustainable Airport Planning, Design and Construction Guidelines

LAWA's Sustainability Plan,[281] developed in April 2008, describes LAWA's current sustainability practices and sets goals and actions that LAWA will undertake to implement the initiatives described above (Green LA, Climate LA, and LAGBC). The Sustainability Plan presents initiatives for the fiscal year 2008-2009 and long-term objectives and targets to meet the fundamental objectives identified above.

In 2008, LAWA developed Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects (LAWA Guidelines), which were subsequently updated in 2009 and 2010.[282] The LAWA Guidelines were developed to provide a comprehensive set of performance standards focusing on sustainability specifically for Airport projects on a project-level basis. A portion of the LAWA Guidelines is based on the LEED® rating systems for buildings. The LAWA Guidelines incorporate a "LAWA-Sustainable Rating System" based on the number of planning and design points and construction points a project achieves, based on the criteria and performance standards defined in the LAWA Guidelines.

Based on the above, LAWA has taken steps to increase its sustainability practices related to daily Airport operations, many of which directly or indirectly contribute to a reduction in GHG emissions. Actions that LAWA has been undertaking include promoting and expanding the Fly Away non-stop shuttle service to the Airport in an effort to reduce the number of vehicle trips to the Airport, establishment of an employee Rideshare Program, use of alternative fuel vehicles, purchasing renewably generated Green Power from LADWP, and reducing electricity consumption by installing energy-efficient lighting, variable demand motors on terminal escalators, and variable frequency drives on fan units at terminals and LAWA buildings.

LAWA also utilizes the LAGBC, described above, in integrating sustainability features into new development and redevelopment projects at LAX. All building projects in the City of Los Angeles are subject to the LAGBC, which is based on CALGreen with some modifications unique to the City of Los Angeles. The LAGBC is a code-requirement that is part of Title 24, and is enforced by the Los Angeles Department of Building & Safety (LADBS). Given that the LAGBC has replaced LEED® in the Los Angeles Municipal Code, LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC. All building projects with an LADBS permit-valuation over $200,000 shall achieve LAGBC Tier-1 conformance, to be certified by LADBS inspector during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy). Tier-1 refers to specific practices that are to be incorporated into projects to "achieving enhanced construction levels by incorporating additional green building measures." Should a project pose unique issues/circumstances based on the scope and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

Other Local Conservation Initiatives

LADWP and SoCal Gas provide several programs for energy customers in Los Angeles to conserve energy. Programs include Consumer Rebate Programs, a Refrigerator Turn-In and Recycling Program, Ultra-Low-Flush Toilet Programs, High-Efficiency Clothes Washer Rebate Program, Trees for a Green LA Program, Green Power Program, Project ANGEL, Outdoor Area Lighting Program, Solar Power Incentives, Power Quality Consulting Programs, and Electric Vehicle Programs. Programs include: Commercial Lighting Efficiency Offer (CLEO), Heating, Ventilation and Air Conditioning (HVAC) Rebate Program, Customer

---

281 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Plan, April 2008. Available: http://www.laxsustainability.org/documents/Final_Sustainability_Plan.pdf, Accessed January 19, 2017.

282 City of Los Angeles, Los Angeles World Airports, Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, Version 5.0, February 2010, Available: https://www.lawa.org/uploadedFiles/LAXDev/News_for_LAXDev/Sustainable%20Airport%20PDC%20Guidelines%20Jan08.pdf , Accessed January 19, 2017.

Generation Rebate, Technical Assistance Program, Ultra-Low-Flush Toilet Rebate for Commercial Customers, Premium Efficiency Motors (PEM) Program, Chiller Efficiency Program, Non-Residential Trees for a Green LA Program, Energy Load Monitoring (ELM) Program, Financing Programs, Outdoor Area Lighting Programs, Power Quality Consulting Program, Green Power Program, Project ANGEL, and Solar Power Incentives. Programs for non-residential customers include rebates on energy efficient HVAC systems and refrigeration equipment, customer generation rebates, energy load monitoring, energy efficiency financing, and solar power incentives.

Applicability to the Proposed Project

The proposed project would be required to implement the applicable measures set forth in the regulations and plans described above to reduce energy usage. Specifically, the proposed project would be designed and constructed to meet LAGBC Tier-1 requirements as well as incorporating LEED® Silver level of sustainability measures, such as the incorporation of energy saving measures such as installation of high efficiency fixtures and lighting and incorporation of energy saving design elements such as natural daylighting and naturally ventilated and unconditioned spaces. As such, inefficient and unnecessary consumption of energy would be minimized.

6.5.3.2 Electricity & Natural Gas Efficiency

Federal Energy Policy and Conservation Acts

The Federal Energy Policy and Conservation Act of 1975, the Federal Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007 require the U.S. Department of Energy (DOE) to set electrical efficiency standards of various appliances, fixtures, and equipment. This has included standards for general service lighting that will require lightbulbs to consume 60 percent less energy by 2020. This standard is leading to the phasing out of incandescent lightbulbs to be replaced by more efficient lighting.

Title 24 Energy Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated on an approximately three year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. The latest update, dated 2016, went into effect on January 1, 2017. The premise for the standards is that energy efficient buildings require less electricity, natural gas, and other fuels. The standards include provisions applicable to all buildings and include mandatory requirements for efficiency and design of systems, equipment, and appliances. The standards include requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment. In addition, the standards call for further energy efficiency measures that can be provided through a choice between performance and prescriptive compliance approaches.

Renewable Portfolio Standard

Senate Bill 1078 (SB 1078) (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010. In November 2008, the Governor signed Executive Order S-14-08, which expands the State's Renewable (Energy) Portfolio Standard (RPS) to 33 percent renewable power by 2020. On September 15, 2009, the Governor issued Executive Order S-21-09 requiring CARB, under its AB 32 authority, to adopt regulations to meet a 33 percent RPS target by 2020. The CARB regulations would use a phased-in or tiered requirement to increase the amount of electricity from eligible renewable sources over an eight-year period beginning in 2012. CARB adopted the regulations in September 2010.

In March 2011, the Legislature passed SB X1-2, which was signed into law by the Governor the following Month. SB X1-2 requires utilities to procure renewable energy products equal to 33 percent of retail sales by December 31, 2020, and also established interim targets: 20 percent by December 31, 2013, and 25 percent by December 31, 2016. SB X1-2 also applies to publicly-owned utilities in California. SB 350 of

2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

Los Angeles Department of Water and Power Plan

LADWP provides electricity to the City of Los Angeles. In 2015 LADWP adopted a new Power Integrated Resource Plan (Power IRP), a 20-year energy resource planning document. This plan provides a framework for LADWP to meet the future energy needs of the City in a cost-effective, reliable, and environmentally sensitive manner. The plan includes updated renewable energy requirements, electrical load forecasts, and revenue and rate impacts. Within the Power IRP, LADWP outlines adequate electricity supply and transmission capability to meet the needs of its customers within the Los Angeles area, including LAX, through 2035. The Power IRP includes updated renewable energy requirements, electrical load forecasts, revenue and rate impacts, and the integration of public input.[283] LADWP lays out a distinct strategy and framework for reducing reliance on coal-generated power through the selling off of its two largest coal-burning facilities in 2016 and 2025 respectively. These two facilities currently represent 40 percent of LADWP's total power generation. Additionally, LADWP will be increasing its renewable portfolio from 20 percent to 50 percent of its total provided power by 2030.

Climate LA

In 2008, the City of Los Angeles followed up Green LA with an implementation plan called Climate LA – Municipal Program Implementing the Green LA Climate Action Plan (Climate LA).[284] A Departmental Action Plan for LAWA is included in Climate LA, which identifies goals to reduce CO_2 emissions 35 percent below 1990 levels by 2030 at LAX and the other three LAWA airports, implement sustainability practices, and develop programs to reduce the generation of waste and pollutants. Actions are specified in the areas of aircraft operations, ground vehicles, electrical consumption, building, and other actions.

Electricity Supply and Existing Utility Infrastructure in the Project Area

Electrical power within the City of Los Angeles, including LAX, is supplied by LADWP, which serves approximately 3.8 million people. LADWP obtains electricity from various generating sources that utilize coal, nuclear, natural gas, hydroelectric, and renewable resources to generate power. Its current system capacity is 7,630 megawatts (MW). LADWP does not forecast that peak demand will reach capacity through 2040. LADWP has committed to increasing the share of renewable energy and promoting increased energy efficiency and conservation by its customers. Diversification of LADWP's energy portfolio, increasing electricity from renewable energy, and new customer energy efficiency measures will help meet all of the City's needs through LADWP's Power IRP planning horizon of 2035.

According to the most recent data available from the Los Angeles Department of Water and Power (LADWP), the utility provider for the City of Los Angeles, approximately 23 percent of its electricity purchases in 2013 were from eligible renewable sources.[285] LADWP has adopted a number of initiatives to increase its use of renewable energy resources to support the goal of reducing GHG emissions, reducing reliance on fossil fuels, and meeting state mandates requiring all utilities to provide 33 percent of their energy from renewable resources by 2020.[286]

---

283 Los Angeles Department of Water and Power, 2015 Power Integrated Resource Plan, December 2015, Available: http://www.ladwp.com/powerIRP, Accessed January 19, 2017.

284 City of Los Angeles, Climate LA - Municipal Program Implementing the Green LA Climate Action Plan, 2008.

285 City of Los Angeles, Los Angeles Department of Water and Power, Power Content Label, Available: https://ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-powercontentlabel;jsessionid=ZfB2XLXbyvcG28SPmnTRBgJnvNTdbqwQpy0jJF8F8yJyyrkp3TFv!194919507?_adf.ctrl-state=19x1t2m6hw_4&_afrLoop=455491631176092&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D455491631176092%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dcxq9wd2qh_4, Accessed November 30, 2015.

286 Los Angeles Department of Water and Power, 2015 Power Integrated Resource Plan, December 2015, Available: http://www.ladwp.com/powerIRP, Accessed January 19, 2017.

Electricity is primarily used at LAX for lighting, cooling, and equipment operation in buildings, and for airfield lighting and operations. Electricity is also used indirectly in the delivery, treatment, and distribution of water used by at the Airport and the treatment of wastewater. Total electricity consumption for LAX was approximately 184,400 MWh for 2015.[287] This represents a 13.5 percent decrease compared to 2014. In 2015 LAWA completed construction of a new highly energy-efficient Central Utility Plant (CUP) to replace LAX's 50-year old CUP. The new CUP became fully operational in September 2015. The new CUP utilizes co-generation technology to produce and deliver heating and cooling. Natural gas powers two combustion turbine generators to generate electricity, which is used to power multiple chillers. A pair of steam generators captures and reuses the heat exhaust from the combustion for heating. The new CUP is 25 percent more energy efficient and more environmentally-friendly than the former facility. LAWA and LADWP estimated that the plant saved approximately 4,548,729 kWh/year in 2015. The new CUP is considered the first sustainable utility plant at a U.S. airport.[288]

Natural Gas Supply and Existing Utility Infrastructure in the Project Area

Sempra Utilities now owns the Southern California Gas Company (SoCalGas). The utility supplies natural gas to nearly all of Southern and Central California, including the City of Los Angeles. SoCalGas projects total gas demand to decline at an annual rate of 0.6 percent from 2016 to 2035. The decline in demand is due to modest economic growth, mandated energy efficiency standards and programs such as the LAGBC, renewable electricity goals, the decline in commercial and industrial demand, and conservation savings linked to Advanced Metering Infrastructure, which uses information technology and two-way communication to modulate price and demand activity.[289] Natural gas is primarily used at LAX for electricity generation, space heating, food preparation, and maintenance activities. Natural gas consumption at LAX in 2015 was approximately 3,067,196 therms (306.6 MMcf) per year.[290] The represents an increase over 2014 consumption; however, the trend over the past five years has been a decrease in natural gas consumption by LAX such that current consumption is less than half of 2011 consumption.[291]

Applicability to the Proposed Project

The proposed project would be required to implement the applicable measures set forth in the regulations and plans described above to reduce electricity and natural gas usage. Specifically, the proposed project would achieve, at a minimum, LAGBC Tier-1 conformance through environmentally-sensitive features including, but not limited to, the types described below, and incorporate LEED® Silver level of sustainability measures, which include the incorporation of energy saving measures such as installation of high efficiency fixtures and lighting and incorporation of energy saving design elements such as natural daylighting and naturally ventilated and unconditioned spaces. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of electricity and natural gas.

6.5.3.3 Water & Wastewater Efficiency

Water Supply Planning

The State of California's Urban Water Management Planning Act of 1984 requires all public water suppliers that provide municipal and industrial water to more than 3,000 customers, or supply more than 3,000 acre-feet per year (AF/Y) of water, to prepare and adopt an Urban Water Management Plan (UWMP). The UWMP must be prepared every five years and submitted to the Department of Water Resources (DWR) for

---

287 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

288 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

289 The California Gas and Electric Utilities, 2016 California Gas Report, 2016, Available: https://www.socalgas.com/regulatory/cgr.shtml.

290 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

291 City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

review. An UWMP is intended to forecast future water demand and supply under normal and dry conditions. The Urban Water Management Planning Act has been modified several times in response to water shortages, droughts, and other factors. The Water Conservation Act of 2009 amended the Urban Water Management Planning Act to call for a statewide reduction of 20 percent in urban water use by the year 2020. An amendment in 2014 requires water suppliers to provide narrative descriptions of their water demand management measures and account for system water losses.

The LADWP adopted a new UWMP in June 2016[292] which serves as a master plan for water supply and resources management consistent with the City's goals and policy objectives. As indicated in the UWMP, LADWP develops long-term water projections based on growth in water use for the entire service area. The current UWMP evaluates a water system facing drought conditions and responds to policy actions, such as Mayor Eric Garcetti's Executive Directive No. 5 Emergency Drought Response,[293] and Sustainable City pLAn,[294] which promotes investment in conservation, recycling, and local source development, and calls for a 25 percent reduction in per capita water use by 2035.[295] The UWMP discusses conservation strategies to help achieve this goal. The UWMP concludes that LADWP has available supplies to meet all projected demands under three hydrologic scenarios analyzed in the UWMP.

Los Angeles Municipal Code

The LAMC includes several ordinances to reduce water consumption that are applicable to the proposed project. Ordinance No. 172,075 (Chapter XII, Article II, of the LAMC), adopted in 1998,[296] requires all building owners to install water closets (with a maximum flow of 3.5 gpm) and low-flow urinals (with a maximum 1.5 gallons per flush) prior to obtaining building permits.

The City adopted the Water Efficiency Requirements Ordinance (Ordinance No. 180,822) in 2009[297] and the Green Building Ordinance (Ordinance No. 182,849) in 2013,[298] which established more stringent requirements for water conservation including use of high efficiency fixtures whenever new fixtures are installed in new and existing buildings. On June 6, 2016, the City adopted Ordinance No. 184,248,[299] which establishes citywide water efficiency standards and requires implementation of water-saving systems and technologies in buildings and landscapes.

6.5.3.4 Water Supply and Existing Utility Infrastructure in the Project Area

The LADWP is responsible for supplying, treating, and distributing water for domestic, industrial, agricultural, and firefighting purposes within the City. The LADWP obtains its water supplies from three major sources: (1) the Owens Valley and Mono Basin via the Los Angeles Aqueduct (LAA); (2) northern California and Colorado River imports purchased from the Metropolitan Water District of Southern California (MWD); and (3) local groundwater basins. In addition, some wastewater within the LADWP service area is recycled for reuse as irrigation or industrial water, or for use in seawater intrusion barriers used to protect groundwater supplies. The average distribution of sources during 2010–2015 was 53 percent purchased from MWD; 34 percent from the LAA; 12 percent from groundwater, and one percent from recycled water.[300]

---

292 Los Angeles Department of Water and Power, Urban Water Management Plan 2015, June 7, 2016.

293 City of Los Angeles, Office of the Mayor, Executive Directive No. 5, Emergency Drought Response – Creating a Water Wise City, October 14, 2014.

294 City of Los Angeles, Office of the Mayor, Sustainable City pLAn, Transforming Los Angeles, Environment - Economy - Equity, April 2015, Available: http://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/The%20pLAn.pdf. Accessed January 19, 2017.

295 Los Angeles Department of Water and Power, Urban Water Management Plan 2015, June 7, 2016.

296 City of Los Angeles, Ordinance No. 172,075, Chapter XII, Article II, 1998.

297 City of Los Angeles, Ordinance No. 180,822, Chapter XII, Article V, Water Efficiency Requirements, 2009.

298 City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.

299 City of Los Angeles, Ordinance No. 184,248, Chapter IX, Articles 4 and 9, Water Efficiency Standards, June 6, 2016.

300 City of Los Angeles, Los Angeles Department of Water and Power, Facts and Figures, Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-factandfigures, Accessed March 29, 2016.

LADWP has set a goal of supplying 8 percent of water demand from recycled water by 2035. In fiscal year 2014/2015, LADWP provided 36,738 AF of recycled water for municipal and industrial purposes and environmental benefits.[301] Reclaimed water in the LAX area is provided by the West Basin Municipal Water District's (WBMWD) Edward C. Little Water Recycling Facility (ECLWRF). The ECLWRF is a tertiary treatment plant and has a capacity of over 72.2 million gallons per day (mgd), approximately 81,000 AF/Y. As described above, the latest UWMP concludes that LADWP has available supplies to meet projected demands through a 25-year planning period.

Applicability to the Proposed Project

During operation, the proposed project would marginally increase employment but would not result in a change in the number of passengers accommodated at LAX than what could otherwise occur in the absence of the project. Construction and operation of the proposed project would not require new or expanded water supply entitlements. Further, to conserve potable water, bathrooms in the new/modernized facilities would be designed with low- and ultra-low-flow systems. This would result in a concurrent reduction in energy demand to supply, treat, and convey water and wastewater. Additionally, recycled water would be used for construction-related dust control and construction equipment washing when feasible. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary energy use associated with increases in water demand and wastewater generation. [302]

6.5.3.5 Transportation Fuel Efficiency During Project Operations

GHG and Fuel Efficiency Standards for Passenger Cars and Light-Duty Trucks

In April 2010, the USEPA and National Highway Traffic Safety Administration (NHTSA) finalized GHG standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles. Under these situations, CO_2 emission limits would decrease from 295 grams per mile (g/mi) in 2012 to 250 g/mi in 2016 for a combined fleet of cars and light trucks. If all the necessary emission reductions were made from fuel economy improvements, then the standards would correspond to a combined fuel economy of 30.1 miles per gallon (mpg) in 2012 and 35.5 mg in 2016. The agencies issues a joint Final Rule for a coordinated National Program for model years 2017 to 2025 light-duty vehicles on August 28, 2012, that would correspond to a combined fuel economy of 36.6 mpg in 2017 and 54.5 mpg in 2025.

California Assembly Bill 1493 (AB 1493) – Pavley

Enacted on July 22, 2002, this bill required the California Air Resources Board (CARB) to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Regulations adopted by CARB apply to 2009 through 2016 vehicles. CARB estimated that the regulation would reduce GHG emissions from the light-duty and passenger vehicle fleet by an estimated 18 percent in 2020 and by 27 percent in 2030, compared to recent years. In 2011, the U.S. Department of Transportation, USEPA, and California announced a single timeframe for proposing fuel and economy standards, thereby aligning the Pavley standards with the federal standards for passenger cars and light-duty trucks.[303]

---

301 City of Los Angeles, Los Angeles Department of Water and Power, LADWP Recycled Water Annual Report Fiscal Year 2014-15, August 2015.

302 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010, Available: http://www3.epa.gov/otaq/climate/regulations/420f10014.pdf, Accessed November 18, 2015.

303 California Environmental Protection Agency, Air Resource Board, EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars, Available: http://www.arb.ca.gov/newsrel/newsrelease.php?id=181, Accessed November 19, 2015.

California Advanced Clean Cars/Zero Emission Vehicle Program

In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combined the control of smog, soot, and global warming gasses and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles.

The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.), Zero Emission Vehicle Program, and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific number of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, are just beginning to enter the marketplace. They are expected to be fully commercial by 2020. The Clean Fuels Outlet regulation ensures that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.

Applicability to the Proposed Project

As discussed in Chapter 2, *Project Description*, the proposed project would not change passenger volumes beyond what would occur without the project, and therefore the proposed project would not change operational traffic at LAX. The proposed project has no features that would result in passengers changing their modes of transportation or their arrival and departure distribution patterns. As a result, although these plans and regulations would reduce fuel consumption of passenger vehicles visiting the airport, that energy demand is not a result of the project and therefore is not applicable to the EIR energy analysis. Transportation fuel efficiency measure are applicable to this analysis only for worker vehicles.

6.5.3.6 Construction Equipment Fuel Efficiency

The Federal Government sets fuel efficiency standards for construction equipment. Tier 4 efficiency requirements are contained in 40 CFR Parts 1039, 1065, and 1068 (originally adopted in 69 Fed. Reg. 38958 [June 29, 2004], and were most recently updated in 2014 [79 Fed. Reg. 46356]).

In October 2010, the U.S. Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration (NHTSA) announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty-vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011. The two agencies' standards reduce GHG emissions by 270 metric tons and to reduce oil consumption by 530 million barrels over the life of the affected vehicles. Similarly, federal and state fuel efficiency standards and programs for light duty vehicles described in the section immediately above would apply to light-duty vehicles used for project construction.

Applicability to the Proposed Project

LAWA has an ongoing commitment to increasing energy efficiency and implementing energy conservation measures to reduce wasteful, inefficient, and unnecessary consumption of energy at its airports, including during construction. Construction equipment used for the proposed project would be required comply with federal and state fuel efficiency standards. In addition, Standard Control Measures LAX-AQ-1 (Construction-Related Air Quality Control Measures) and AQ (T2/T3)-1 (Preferential Use of Renewable Diesel Fuel), intended to reduce significant construction-related air quality impacts, are also applicable to fuel consumption of construction equipment and the reduction of reliance on fossil fuels. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary energy use associated construction activities.

6.5.3.7 Summary

As described above, the proposed project would be located within an area that has existing energy and water available to serve the proposed project. It would comply with federal, state, and local regulations and policies reducing energy demand associated with building energy use, water demand, wastewater

generation, vehicle fuels, and construction equipment. In addition, electricity supplied to the project would be required to comply with California's aggressive renewable portfolio standard. Therefore, the proposed project's construction and operation would not result in wasteful, inefficient, or unnecessary energy use; would not increase reliance on fossil fuels; and would incorporate renewable energy and energy efficiency measures. Since the proposed project's energy impacts would therefore be less than significant, no energy mitigation measures (e.g., additional energy conservation measures) are required. It should be noted, however, that the proposed project's vehicle fuel use would be further reduced by implementation of Mitigation Measure LAX-AQ-1 (Construction-Related Air Quality Control Measures), and implementation of Mitigation Measure AQ (T2/T3)-1 (Preferential Use of Renewable Diesel Fuel) would further reduce the proposed project's reliance on fossil fuels.

6.5.4 Cumulative Impacts

As discussed in Chapter 4, *Environmental Impact Analysis*, cumulative impacts can be analyzed using either a "list" or "plan" approach. Using a "list" approach, in Chapter 3, *Overview of Project Setting*, Tables 3-1 and 3-2 identify other ongoing and future projects within the project area. Like the proposed project, these projects would also be required to comply with the energy conservation and renewable energy programs described earlier in this section. For example, new buildings would be required to meet energy consumption standards prescribed for new structures in Title 24, and all LAX development projects would also comply with LAWA's Sustainability Plan. Therefore, there would be no significant cumulative impacts related to wasteful, inefficient, or unnecessary energy use, or increased reliance on fossil fuels.

Cumulative impacts on energy supply and distribution facilities caused by regional growth are best assessed using a "plan" approach. LADWP has forecasted future utility demand in the Power IRP and concluded that excess capacity exists over the planning horizon through 2040.[304] Based on the demand growth forecast, significant cumulative utility impacts on supply and distribution capabilities or on new supply facilities and distribution infrastructure are unlikely; thus, cumulative impacts on energy supply and distribution facilities caused by increased energy demand would be less than significant.

[304] Los Angeles Department of Water and Power, 2015 Power Integrated Resource Plan, December 2015, Available: http://www.ladwp.com/powerIRP, Accessed January 19, 2017.

7. LIST OF PREPARERS, PARTIES TO WHOM SENT, LIST OF REFERENCES, NOP AND SCOPING MEETING COMMENTS, AND LIST OF ACRONYMS

This chapter contains the following information:

- List of Preparers
- Parties to Whom Sent
- List of References
- NOP and Scoping Meeting Comments
- List of Acronyms

7.1 List of Preparers

Los Angeles World Airports

Samantha Bricker, Deputy Executive Director
Angelica Espiritu, City Planner
Evelyn Quintanilla, Chief of Airport Planning
Jessica Baker, Chief of Airport Planning

Trifiletti Consulting

Project Management Assistance/Technical Review
Lisa Trifiletti, Principal

CDM Smith

Project Management Team
Dorothy Meyer, Principal Planner and Project Manager
Anthony J. Skidmore, AICP, Vice President and Technical Oversight

CEQA Documentation
Katie Owston, Senior Planner
Juan Ramirez, Planner

Air Quality, Human Health Risk Assessment, and Greenhouse Gas Emissions
John R. Pehrson, P.E., Associate
Jeremy Gilbride, Chemical Engineer
Christopher Campbell, Environmental Scientist

JBG Environmental Consulting

CEQA Documentation and Technical Review
Julie Gaa, Principal

Ricondo & Associates, Inc.

Construction Surface Transportation and Aviation Planning

Joseph Huy, Senior Vice President
Stephen Culberson, Vice President
Francois Bijotat, Director
Chad Townsend, Director
James Ducar, Managing Consultant

7.2 Parties to Whom Sent

Following is a list of the parties to whom copies of this Draft EIR were sent for review or to whom notice of the availability of this Draft EIR was sent. In addition to the parties listed below, the notice of availability was sent to on-airport tenants.

BOAC Office
Sandy Miller
Exec Assistant II
One World Way, 1st Floor
Los Angeles, CA 90045

Stakeholder Liaison Office
Brenda Martinez-Sidhom
LAX Stakeholder Liaison
One World Way, Suite 219
Los Angeles, CA 90045

City of Los Angeles
Mike Bonin
Councilmember CD 11
200 N. Spring Street, Room 415
Los Angeles, CA 90012

City of Los Angeles
Omar Pulido
Community Liaison -
CD 11 Field Office
7166 W. Manchester Ave.
Los Angeles, CA 90045

City of Los Angeles, Dept. of General Services,
Asset Mgmt. Division
Melody McCormick
Asset Management Director
111 E First St, 5th floor
Los Angeles, CA 90012

City of Los Angeles Department of Public Works, Bureau of Sanitation, Solid Waste Division
Paul Cobian
Environmental Supervisor
1149 South Broadway, 11th Fl
Los Angeles, CA 90015

City of Los Angeles
Dept. of Public Works,
Bureau of Engineering
Maria Martin
Environmental Group Manager
1149 S. Broadway, 6th Floor,
Suite 600
Los Angeles, CA 90015-2213

City of Los Angeles
Dept. of Building & Safety
Frank Bush
Interim General Manager
201 N. Figueroa Street
Los Angeles, CA 90012

City of Los Angeles
Dept. of City Planning
Vince Bertoni
Planning Director
200 N. Spring Street, 5th Floor
Los Angeles, CA 90012

City of Los Angeles Department of Transportation
Zaki M Mustafa
Principal Transportation Engineer
100 S. Main Street, 10th Floor
Los Angeles, CA 90012

LADOT, West LA
Mo Blorfroshan
Development Review
7166 W. Manchester Ave.
Los Angeles, CA 90045

City of Los Angeles Department of Transportation
Seleta Reynolds
100 S. Main Street, 10th Floor
Los Angeles, CA 90012

City of Los Angeles Department of Water & Power,
Nadia Jeannine Parker
Supervisor of Environmental Assessment
111 N. Hope Street, Room 1044
Los Angeles, CA 90012

City of Los Angeles
Mayors Office
Borja Leon
Director, Transportation Services
200 N. Spring Street, Room 303
Los Angeles, CA 90012

Los Angeles Fire Department
Construction Services Unit
200 N. Main Street
Los Angeles, CA 90012

Los Angeles Fire Department
Chief Ralph Terrazas
200 N. Main Street, 16th floor
Los Angeles, CA 90012

Los Angeles Fire Department
Fire Station 5
8900 S. Emerson Ave
Los Angeles, CA 90045

Los Angeles Fire Department
Fire Station 51
10435 Sepulveda Blvd.
Los Angeles, CA 91345

Los Angeles Fire Department
Fire Station 80
7250 World Way West
Los Angeles, CA 90045

Los Angeles Fire Department
Fire Station 95
10010 International Road
Los Angeles, CA 90045

Los Angeles Police Department
Pacific Community Crime Prevention Unit
12312 Culver Blvd.
Los Angeles, CA 90066

Cal Trans, District 7
Transporta□on Planning Office
DiAnna Watson
IGR/CEQA Program Manager
100 S. Main Street
Los Angeles, CA 90012

Cal Trans
Division of Aeronautics
Sandy Hesnard
1120 N. Street, Room 300
Sacramento, CA 94274

City of Culver City
John M. Nachbar
City Manager
9770 Culver Blvd.
Culver City, CA 90232

City of El Segundo
Mayor Suzanne Fuentes
350 Main Street
El Segundo, CA 90245

City of El Segundo
Mayor Pro Tem Drew Boyles
350 Main Street
El Segundo, CA 90245

City of El Segundo
City Manager Greg Carpenter
350 Main Street
El Segundo, CA 90245

City of Inglewood
Mayor James T. Butts Jr.
One Manchester Boulevard, 9th Floor
Inglewood, CA 90301

County of Los Angeles
Sachi A. Hamai
Chief Executive Officer
500 West Temple Street.
Los Angeles, CA 90012

County of Los Angeles Dept. of Beaches and Harbors
Planning Division
13483 Fiji Way, TR #3
Marina Del Rey, CA 90292

County of Los Angeles
Department of Public Health
Terri Williams
5050 Commerce Drive
Baldwin Park, CA 91706

County of Los Angeles
Department of Public Works
Land Development Division
Anthony Nyivih
P.O. Box 1460
Alhambra, CA 91802-1460

County of Los Angeles
Department of Public Works
Planning Division
900 S. Fremont Ave., 11th Floor
Alhambra, CA 91803

County of Los Angeles
Department of Regional Planning/Airport Land Use Commission
Richard J. Bruckner
Director of Regional Planning
320 W. Temple Street
Los Angeles, CA 90012

County of Los Angeles
Department of Regional Planning
Impact Analysis Section
320 W. Temple St., Room 1356
Los Angeles, CA 90012

County of Los Angeles Dept. of Beaches & Harbors
Charlotte Miyamoto
Planning Division Chief
13837 Fiji Way
Marina Del Rey, CA 90292

County Supervisor, 1st District
Hon. Supervisor Hilda L. Solis
856 Kenneth Hahn Hall of Administration 500 W. Temple Street, Rm 856
Los Angeles, CA 90012

County Supervisor, 2nd District
Hon. Supervisor
Mark Ridley-Thomas
866 Kenneth Hahn Hall of Administration 500 W. Temple Street, Rm 866
Los Angeles, CA 90012

County Supervisor, 3rd District
Hon. Supervisor Sheila Kuehl
821 Kenneth Hahn Hall of Administration 500 W. Temple Street, Rm 821
Los Angeles, CA 90012

County Supervisor, 4th District
Hon. Supervisor Janice Hahn
822 Kenneth Hahn Hall of Administration 500 W. Temple Street, Rm 822
Los Angeles, CA 90012

County Supervisor, 5th District
Hon. Supervisor
Kathryn Barger
869 Kenneth Hahn Hall of Administration 500 W. Temple Street, Rm 869
Los Angeles, CA 90012

Federal Aviation Administration
Western, Pacific Region
Victor Globa
Environmental Protection Specialist
15000 Aviation Blvd., Rm 3000
Lawndale, CA 90261

Federal Aviation Administration
Western, Pacific Region
Patrick Lammerding
Assistant Manager
15000 Aviation Blvd., Rm 3024
Lawndale, CA 90261

AT&T Mobility
Saiful Hua
1452 Edinger Avenue, 3rd Floor
Tustin, CA 92780

Los Angeles County Metropolitan Transportation Authority
Metro CEQA Review Coordination
One Gateway Plaza
Los Angeles, CA 90012

LA County Metropolitan Transportation Authority
Stephen Vollucci
Principal Real Estate Officer
One Gateway Plaza
Los Angeles, CA 90012

South Coast Air Quality Management District
Jillian Wong
21865 Copley Drive
Diamond Bar, CA 91765

Southern California Association of Governments
Ryan Hall
Inter-Governmental Review
818 W. 7th Street, 12th Floor
Los Angeles, CA 90017

State Clearinghouse
Office of Planning and Research
Scott Morgan
1400 10th Street
Sacramento, CA 95814

US Coast Guard
Thomas Cooper
Commanding Officer
7159 World Way West
Los Angeles, CA 90012

US Customs & Border Protection
Ana Hinojosa
11099 S LaCienega Blvd #201
Los Angeles, CA 90045

US Dept. of Homeland Security
Aimee Jackson
Program Manager
601 S 12th Street TS-9, E.Tower
Arlington, VA 22202

US General Services Agency
John Venegas
Lease Administration Specialist
11000 Wilshire Blvd. Suite 7100
Los Angeles, CA 90024

US Postal Service
Laureen Yamakido
Real Estate Specialist
1300 Evans Ave., Suite 200
San Francisco, CA 94188-8200

Alliance for a Regional Solution to Airport Congestion (ARSAC)
President Denny Schneider
7929 Breen Avenue
Los Angeles, CA 90045

ARSAC
Diane Sambrano
3640 W. 111th Place
Inglewood, CA 90303

Buchalter Nemer
Barbara Lichman
Counsel for Cities of Inglewood and Culver City and County of LA
18400 Von Karman Ave, Ste 800
Irvine, CA 92612

Chatten-Brown & Carstens
Douglas Carstens
Counsel for ARSAC
2200 Pacific Coast Hwy, St 318
Hermosa Beach, CA 90254

City of Culver City
Carol Schwab
City Attorney
9770 Culver Boulevard 3rd Floor
Culver City, CA 90232

City of Culver City
Heather Baker
Assistant City Attorney
9770 Culver Boulevard 3rd Floor
Culver City, CA 90232

County of Los Angeles
Claudia Gutierrez
Deputy County Counsel
500 West Temple St, Rm 610
Los Angeles, CA 90012

Shute, Mihaly & Weinberger LLP
E. Clement Shute, Counsel
396 Hayes Street
San Francisco, CA 94102

Shute, Mihaly & Weinberger LLP
Osa Wolff, Counsel
396 Hayes Street
San Francisco, CA 94102

Shute, Mihaly & Weinberger LLP
Gabriel Ross, Counsel
396 Hayes Street
San Francisco, CA 94102

Shute, Mihaly & Weinberger LLP
Joseph Petta, Counsel
396 Hayes Street
San Francisco, CA 94102

Airlines for America
Tim Pohle
Assistant General Counsel
1275 Pennsylvania Ave, NW,
Suite 1300
Washington, DC 20004

AvAirPros
Matt Ross
Vice President
300 N. Continental Blvd, Ste 625
El Segundo, CA 90245

Gateway to LA Business Improvement District
6151 W. Century Blvd., Suite 121
Los Angeles, CA 90045

LAX Area Advisory Committee
William Cumming, Chair
Post Office Box 92216
Los Angeles, CA 90009-2216

Neighborhood Council of Westchester/Playa
8726 S. Sepulveda Blvd.,
PMB 191A
Los Angeles, CA 90045

Westchester Town Center Business Improvement District
Karen Dial, President
8929 S. Sepulveda Blvd.,
Suite 130
Westchester, CA 90045

Delta LAX T2/T3 Mod Program
Ryan Kwiecinski
6033 West Century Blvd,
Suite 1200
Los Angeles, CA 90045

City of Inglewood
Kenneth Campos
City Attorney
One Manchester Boulevard
Inglewood, CA 90301

Edward Keating
8707 Falmouth Avenue, Apt 216
Playa del Rey, CA 90293

David Mannix
8101 McConnell Avenue
Los Angeles, CA 90045

Bonnie Sadrpour
7100 W. 91 Street
Los Angeles, CA 90045-3447

Janet Yap
6537 W. 86th Place
Westchester, CA 90045

LAWA Police Dept.
Patrick Gannon, Chief
One World Way
Los Angeles, CA 90045

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame
Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower, CA 90707

Gabrielino-Tongva Tribe
Linda Candelaria
Co-Chairperson
1999 Avenue of the Stars,
Ste 1100
Los Angeles, CA 90067

Gabrielino/Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St.,
#231
Los Angeles, CA 90012

Soboba Band of Mission Indians
Rosemary Morillo, Chairperson
P.O. Box 487
San Jacinto, CA 92581

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

Gabrieleno Band of Mission Indians-Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

Native American Heritage Commission
Gayle Totton
Associate Governmental Program Analyst
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

Repositories

Sr. Librarian
Culver City Library
4975 Overland Avenue
Culver City, CA 90230

Sr. Librarian
El Segundo Public Library
111 W. Mariposa Avenue
El Segundo, CA 90245

Sr. Librarian
Inglewood Public Library
101 W. Manchester Blvd.
Inglewood, CA 90301

Sr. Librarian
Westchester-Loyola Village Branch Library
7114 W. Manchester Ave.
Los Angeles, CA 90045

Sr. Librarian
Playa Vista Branch Library
6400 Playa Vista Drive
Los Angeles, CA 90094

7.3 List of References

All documents listed below are available for public inspection at the following location:

Los Angeles World Airports
One World Way, Room 218
Los Angeles, CA 90045

13 California Code of Regulations, Section 1962.1 & Section 1962.2, Advanced Clean Cars.

14 California Code of Regulations, Chapter 11.5, Section 4852(c), Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources.

14 California Code of Regulations, Section 15064.5(a), Determining the Significance of Impacts to Archaeological and Historical Resources.

17 California Code of Regulations, Section 95480 et seq., Low Carbon Fuel Standard.

24 CCR Part 11, CalGREEN.

36 Code of Federal Regulations, Section 60.2, Effects of Listing under Federal Law.

Airport Carbon Accreditation, Greenhouse Gas Protocol, Available: http://www.airportcarbonaccredited.org/airport/4-levels-of-accreditation/ghg-protocol.html, accessed January 20, 2017

Association of Environmental Professionals (AEP), Forecasting Community-Wide Greenhouse Gas Emissions and Setting Reduction Targets, Available: https://www.califaep.org/docs/AEP_Next_Steps_White_Paper.pdf, accessed January 20, 2017.

Ayala, Pedro, City of Los Angeles Department of Transportation, email to Pat Tomcheck, Los Angeles World Airports, Subject: Re: Traffic Impact Studies for Construction-Related Impacts, January 19, 2017.

Bean, L.J., and C.R. Smith, "Gabrielino," Handbook of North American Indians, Vol. 8, ed., R.F. Heizer, Washington, DC: Smithsonian Institution, pp. 538, 540-541,546-547, 1978.

California Air Pollution Control Officers Association, Appendix A of the CalEEMod2016.3.1 User Guide, 2016. Available: http://www.aqmd.gov/docs/default-source/caleemod/upgrades/2016.3/02_appendix-a2016-3-1.pdf?sfvrsn=2, Accessed January 19, 2017.

California Air Pollution Control Officers Association, Modeling Compliance of the Federal 1-Hour NO2 NAAQS, October 27, 2011, p. 14. Available: https://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf, Accessed August 22, 2016.

California Air Resources Board, 2007 Inventory Model for In-Use Off-Road Equipment, Available: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles, Accessed July 19, 2016.

California Air Resources Board, 2011 Inventory Model for In-Use Off-Road Equipment, Available: http://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles, Accessed July 19, 2016.

California Air Resources Board, Ambient Air Quality Standards Chart, Available: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, Accessed November 15, 2016.

California Air Resources Board, AQMIS2, Available: http://www.arb.ca.gov/aqmis2/aqmis2.php, Accessed November 15, 2016.

California Air Resources Board, California Emission Inventory and Reporting System (CEIDARS) - Particulate Matter (PM) Speciation Profiles - Summary of Overall Size Fractions and Reference Documentation, June 2, 2016, Available: http://www.arb.ca.gov/ei/speciate/pmsizeprofile2jun16.zip, Accessed August 5, 2016.

California Air Resources Board, California Emissions Estimator Model, Version 2013.2.2, Available: http://www.caleemod.com/, Accessed November 12, 2015.

California Air Resources Board, California Greenhouse Gas Inventory for 2000-2014 - by Category as Defined in the 2008 Scoping Plan, March 30, 2016, Available: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_2000-14.pdf, Accessed September 2, 2016.

California Air Resources Board, Cancer Inhalation Risk: Local Trend Maps, Available: http://www.arb.ca.gov/ch/communities/hlthrisk/cncrinhl/rskmapvwtrend.htm.400, Accessed January 19, 2017.

California Air Resources Board, Facts about Emissions and Health Benefits of Regulation for In-Use Off-Road Diesel Vehicles, revised September 20, 2007, Available: http://www.arb.ca.gov/msprog/ordiesel/documents/OFRDDIESELhealthFS.pdf, Accessed November 2013.

California Air Resources Board, Glossary of Air Pollution Terms, Available: http://www.arb.ca.gov/html/gloss.htm, Accessed July 19, 2016.

California Air Resources Board, iADAM: Air Quality Data Statistics, Available: http://www.arb.ca.gov/adam/, Accessed November 15, 2016.

California Air Resources Board, In-Use Off-Road Diesel Vehicle Regulation, Overview, Revised February 2014, Available: http://www.arb.ca.gov/msprog/ordiesel/faq/overview_fact_sheet_dec_2010-final.pdf, Accessed November 2016.

California Air Resources Board, Local Government Operations Protocol, version 1.1, Available: https://www.arb.ca.gov/cc/protocols/localgov/pubs/lgo_protocol_v1_1_2010-05-03.pdf, accessed January 20, 2017.

California Air Resources Board, Research Division, EMFAC2014 On-Road Emissions Inventory Estimation Model, Available: http://www.arb.ca.gov/msei/modeling.htm, Accessed November 12, 2015.

California Air Resources Board, Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, November 16, 2007, Available: http://www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf, Accessed November 2015.

California Air Resources Board, The 2017 Climate Change Scoping Plan Update – The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, January 20, 2017.

California Air Resources Board, Stationary Source Division, Mobile Source Control Division, Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, October 2000, Available: http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf, Accessed August 22, 2016.

California Air Resources Board. "Area Designations Maps/State and National." Available: https://www.arb.ca.gov/desig/adm/adm.htm, Accessed January 19, 2017.

California Assembly Bill 32, September 27, 2006.

California Climate Change Center, Available: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf, Accessed January 20, 2017.

California Code of Regulations, Title 24, Part 6.

California Department of Finance, Demographic Research Unit, Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2015 with 2010 Benchmark, May 1, 2015. Available: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/, Accessed January 19, 2017.

California Department of Finance, Gross Domestic Product, California, Available: http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/, Accessed September 11, 2016.

California Energy Commission, Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004, December 2006. Available: http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF, Accessed January 19, 2017.

California Environmental Protection Agency, Air Resource Board, EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars, Available: http://www.arb.ca.gov/newsrel/newsrelease.php?id=181, Accessed November 19, 2015.

California Environmental Protection Agency, Air Resources Board, Planning and Technical Support Division Emission Inventory Branch, Initial Statement of Reasons for Rulemaking, Proposed Regulation for Mandatory Reporting of Greenhouse Gas Emissions Pursuant to the California Global Warming Solutions Act of 2006 (Assembly Bill 32), October 19, 2007.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I: The Determination of Acute Reference Exposure Levels for Airborne Toxicants, March 1999, Available: http://oehha.ca.gov/air/crnr/adoption-air-toxics-hot-spots-risk-assessment-guidelines-part-i-technical-support-document, Accessed January 19, 2017.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part III: Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels, June 2008, Available: http://oehha.ca.gov/air/crnr/air-toxics-hot-spots-program-risk-assessment-guidelines-part-iii-1999, Accessed January 19, 2017.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program Risk Assessment Guidelines, Part II: Technical Support Document for Describing Available Cancer Potency Factors, updated May 2009, Available: http://oehha.ca.gov/air/crnr/technical-support-document-cancer-potency-factors-2009, Accessed January 19, 2017.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines, Part IV: Technical Support Document for Exposure Assessment and Stochastic Analysis, August 2012, Available: http://oehha.ca.gov/air/crnr/notice-adoption-technical-support-document-exposure-assessment-and-stochastic-analysis-aug, Accessed January 19, 2017.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Air Toxics Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessments, February 2015, Available: http://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0, Accessed January 19, 2017.

California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals, Accessed January 19, 2017.

California Executive Order B-30-15, April 29, 2015.

California Executive Order S-3-05, June 1, 2005.

California Occupational Safety and Health Administration, Table AC-1, Permissible Exposure Limits for Chemical Contaminants, Available: https://www.dir.ca.gov/title8/5155table_ac1.html, Accessed January 19, 2017.

California Office of Historic Preservation, Instructions for Recording Historical Resources, March 1995. Available: http://scic.org/docs/OHP/manual95.pdf, Accessed January 19, 2017.

California Public Resources Code, Section 21084.1.

California Public Resources Code, Section 5024.1(a).

California Public Resources Code, Section 5024.1(b).

California Public Resources Code, Section 5024.1(d).

California Public Resources Code, Section 5024.1(e).

California Senate Bill 375, September 30, 2008.

California Senate Bill 97, August 24, 2007.

Carranza, Tomas, City of Los Angeles Department of Transportation, email to Pat Tomcheck, Los Angeles World Airports, Subject: Re: FW: LAX Traffic Methodology Memo, July 29, 2004.

City of El Segundo, Planning and Building Safety Department, City of El Segundo, Circulation Element of the General Plan, Policy C3-1.2, September 2004, Available: http://www.elsegundo.org/civicax/filebank/blobdload.aspx?blobid=3023, Accessed January 19, 2017.

City of Los Angeles Department of Transportation, Traffic Study Policies and Procedures, August 2014.

City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), April 2004, Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements (SCH 1997061047), Section 4.9.1 – Historic/Architectural and Archaeological/Cultural Resources, April 2004, Available: http://www.lawa.org/ourlax/pastprojects.aspx?id=8844, Accessed January 19, 2017.

City of Los Angeles, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, (SCH 1997061047), Section 4.24.1, Human Health Risk Assessment, Technical Report 14a, Health Risk Assessment, and Technical Report S-9s, Supplemental Health Risk Assessment, April 2004. Available: http://www.lawa.org/ourLAX/PastProjects.aspx?id=8844, Accessed January 19, 2017.

City of Los Angeles, Antonio R. Villaraigosa, Mayor, Executive Directive No. 10, Subject: Sustainable Practices in the City of Los Angeles, July 18, 2007.

City of Los Angeles, Climate LA - Municipal Program Implementing the Green LA Climate Action Plan, 2008.

City of Los Angeles, Department of City Planning, LAX Plan, Originally Adopted December 4, 2004, last amended May 24, 2013. Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf, Accessed January 19, 2017.

City of Los Angeles, Department of City Planning, LAX Specific Plan, adopted by Los Angeles City Council December 14, 2004, last amended June 14, 2016. Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf, Accessed January 19, 2017.

City of Los Angeles, Green LA - An Action Plan to Lead the Nation in Fighting Global Warming, May 2007, Available: http://environmentla.org/pdf/GreenLA_CAP_2007.pdf, Accessed January 19, 2017.

City of Los Angeles, L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles, 2006, Available: http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf, Accessed January 19, 2017.

City of Los Angeles, Los Angeles Department of Water and Power, Facts and Figures, Available: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-water/a-w-factandfigures, Accessed March 29, 2016.

City of Los Angeles, Los Angeles Department of Water and Power, LADWP Recycled Water Annual Report Fiscal Year 2014-15, August 2015.

City of Los Angeles, Los Angeles Department of Water and Power, Power Content Label, Available: https://ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-powercontentlabel;jsessionid=ZfB2XLXbyvcG28SPmnTRBgJnvNTdbqwQpy0jJF8F8yJyyrkp3TFv!194919507?_adf.ctrl-state=19x1t2m6hw_4&_afrLoop=455491631176092&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D455491631176092%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dcxq9wd2qh_4, Accessed November 30, 2015.

City of Los Angeles, Los Angeles World Airports, Draft Environmental Impact Report for Los Angeles International Airport (LAX) Landside Access Modernization Program, (SCH 2015021014), September 2016, Available: http://www.connectinglax.com/informed.html, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, (SCH 1997061047), January 2013, Available: http://www.lawa.org/LAXSPAS/Reports.aspx, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) South Airfield Improvement Project, (SCH 2004081039), October 2005. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=8820, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, (SCH 2008121080), September 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=10040, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Central Utility Plant Project, (SCH 2009041043), October 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=2348, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Crossfield Taxiway Project, (SCH 2008041058), January 2009. Available: http://www.lawa.org/ourLAX/Pastprojects.aspx?id=8829, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project, (SCH 2012101019), January 2014. Available: http://www.lawa.org/ourLAX/RSA-South.aspx, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Midfield Satellite Concourse (MSC), (SCH 2013021020), June 2014. Available: http://www.lawa.org/MSCNorth/Index.aspx, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA) and Associated Improvement Projects, (SCH 2014051040), June 2014. Available: http://www.lawa.org/ourLAX/Currentprojects.aspx?id=7984, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) West Aircraft Maintenance Area (WAMA) Project, (SCH 2012091037), February 2014. Available: http://www.lawa.org/ourLAX/wama.aspx, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update, (SCH 2012041003), December 2014, Available: Northside Plan Update, (SCH 2012041003), Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan: Mitigation Monitoring & Reporting Program - Archaeological Treatment Plan, prepared by Brian F. Smith and Associates, June 2005.

City of Los Angeles, Los Angeles World Airports, Final LAX Master Plan Mitigation Monitoring & Reporting Program: Paleontological Management Treatment Plan, prepared by Brian F. Smith and Associates, revised December 2005.

City of Los Angeles, Los Angeles World Airports, Los Angeles International Airport (LAX) Terminal 1.5 Project Initial Study-Final Mitigated Negative Declaration, November 2016, Available: http://www.lawa.org/ourLAX/Currentprojects.aspx?id=13739, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Los Angeles International Airport (LAX) 2012 Airport-Wide Emissions Inventory Final, Appendix A, CDM Smith Inc. April 2015

City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Report 2015, Available: http://www.laxsustainability.org/documents/Sustainability_Report_2015.pdf, accessed August 25, 2016.

City of Los Angeles, Los Angeles World Airports, Los Angeles World Airports Sustainability Plan, April 2008. Available: http://www.laxsustainability.org/documents/Final_Sustainability_Plan.pdf, Accessed January 19, 2017.

City of Los Angeles, Los Angeles World Airports, Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects, Version 5.0, February 2010, Available: https://www.lawa.org/uploadedFiles/LAXDev/News_for_LAXDev/Sustainable%20Airport%20PDC%20Guidelines%20Jan08.pdf, Accessed January 19, 2017.

City of Los Angeles, Office of the Mayor, Executive Directive No. 5, Emergency Drought Response – Creating a Water Wise City, October 14, 2014.

City of Los Angeles, Office of the Mayor, Sustainable City pLAn, Transforming Los Angeles, Environment - Economy - Equity, April 2015, Available: http://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/The%20pLAn.pdf. Accessed January 19, 2017.

City of Los Angeles, Ordinance No. 172,075, Chapter XII, Article II, 1998.

City of Los Angeles, Ordinance No. 180,822, Chapter XII, Article V, Water Efficiency Requirements, 2009.

City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.

City of Los Angeles, Ordinance No. 184,248, Chapter IX, Articles 4 and 9, Water Efficiency Standards, June 6, 2016.

City of Los Angeles, Sustainable City pLAn, First Annual Report 2015-2016, April 2016, Available: http://www.lamayor.org/sites/g/files/wph446/f/landing_pages/files/Plan-annual%20update-online.pdf. Accessed January 19, 2017.

Jeff Cunnyngham, FAA LAX Tower Operations Manager, email to David Vogt, Delta: Subject: New DAL Gate Plan for Terminal 2 and 3, November 25, 2016.

Dowling Associates, TRAFFIX Version 7.7.

Historic Resources Group, LAX Terminals 2 and 3 Modernization Project Historic Resources Technical Report, June 2016; included in Appendix A of this Draft EIR.

Federal Aviation Administration, Advisory Circular 150/5070-6B Airport Master Plans, Chapter 7 Aviation Forecasts, pp. 37-38.

Federal Aviation Administration, Advisory Circular 150/5300-13A, Airport Design, Paragraph 504.d., p. 167.

Gayle Totton, NAHC, email to Dorothy Meyer, CDM Smith, Subject: RE: Proposed Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project, City of Los Angeles; Venice USGS Quadrangle, Los Angeles County, California (SLF Search Results), September 14, 2016.

Intergovernmental Panel on Climate Change, Available: https://www.ipcc.ch/publications_and_data/publications_and_data.shtml, accessed November 18, 2015

Intergovernmental Panel on Climate Change, [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Contribution of Working Group I to the Fourth Assessment Report, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available: https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter2.pdf, Accessed January 19, 2017.

Intergovernmental Panel on Climate Change, IPCC Fourth Assessment Report, History, Available: https://www.ipcc.ch/organization/organization_history.shtml, accessed November 18, 2015.

Johnson, John R., Thomas W. Stafford, Jr., Henry O. Ajie, and Don P. Morris, Arlington Springs Revisited, Proceedings of the Fifth California Islands Symposium, edited by David R. Brown, Kathryn C. Mitchell and Henry W. Chaney, pp. 541–545, Santa Barbara Museum of Natural History, Santa Barbara, 2002.

Keller, Jean K. and Daniel F. McCarthy, "Data Recovery at the Cole Canyon Site (CA-RIV-139), Riverside, California", Pacific Coast Archaeological Society Quarterly, 25(1):6, 1989.

Los Angeles Administrative Code, Chapter 9, Division 22, Article 1, Section 22.171 et seq., Cultural Heritage Ordinance, Effective April 2, 2007, Available: http://preservation.lacity.org/sites/default/files/Cultural%20Heritage%20Ordinance.pdf, Accessed, January 19, 2017.

Los Angeles County Metropolitan Transportation Authority, Crenshaw/LAX Transit Corridor Project Final Environmental Impact Report/Environmental Impact Statement, Chapter 3, Transportation Impacts of the Alignment and Stations, Section 4.15, Construction Impacts, and Chapter 8, Financial Analysis and Comparison of Alternatives (Metro Crenshaw/LAX Transit Corridor cost), August 2011, Available: https://www.metro.net/projects/crenshaw_corridor.com (Metro Crenshaw/LAX Transit Corridor schedule), accessed January 12, 2017.

Los Angeles Department of Water and Power, 2015 Power Integrated Resource Plan, December 2015, Available: http://www.ladwp.com/powerIRP, Accessed January 19, 2017.

Los Angeles Department of Water and Power, Urban Water Management Plan 2015, June 7, 2016.

Los Angeles Metropolitan Transportation Authority, Congestion Management Program, Appendix D, Exhibit D-1, South Bay/LAX Area, 2010. Available: http://media.metro.net/projects_studies/cmp/images/CMP_Final_2010.pdf, Accessed January 19, 2017.

Los Angeles World Airports, News Release, September 27, 2016. Available at: https://www.lawa.org/newsContent.aspx?ID=2236, accessed on January 20, 2017

Meighan, C.W, "A Late Complex in Southern California Prehistory", Southwestern Journal of Anthropology 10:215–227, 1954.

Memorandum from Deborah Flint, Chief Executive Officer, Los Angeles World Airports, LAWA's Commitment to Carbon Management Goals, August 31, 2016.

Moratto, Michael J., California Archaeology, Academic Press, San Diego, p. 158, 1984.

NAHC, Native American consultation list for the adjacent LAX Terminal 1.5 Project Approval for the proposed project, electronic mail message received January 14, 2016.

NAHC, Sacred Lands File Search, electronic mail message received September 14, 2016.

National Centers for Environmental Information, Climate Data Online: Dataset Discovery, Available: https://www.ncdc.noaa.gov/cdo-web/datasets, accessed July 19, 2016.

National Research Council of the National Academies, Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties, 2005.

Neste Oil Corporation, NEXBTL Renewable Diesel, 2014, Available: https://www.neste.com/sites/default/files/attachments/nexbtl_03032014.pdf, accessed August 23, 2016.

PCR Services Corporation, Archaeological and Paleontological Resources Assessment for the Proposed Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, California, January 23, 2015 (Appendix I of the LAX Landside Access Modernization Program Draft Environmental Impact Report, September 15, 2016, Available: http://www.lawa.org/ourLAX/CurrentProjects.aspx?id=8807).

Propel Fuels, 2016, Available: https://propelfuels.com/fleet_and_commercial, accessed August 23, 2016.

Public Resources Code Section 21080.3.1(c)

Raju Associates Inc., LAX Intersection Traffic Counts, 2013-2015, March 2015.

Raju Associates, Inc., Traffic Study Assumptions and Methodology Memorandum to City of Inglewood, October 27, 2015.

Ricondo and Associates, LAX Terminals 2 and 3 Traffic Volume Adjustment, December 2016.

Rob Wood, Associate Environmental Planner, Native American Heritage Commission to Angelica Espiritu, City of Los Angeles, Los Angeles World Airports, November 24, 2015.

Ruffner, J.A., Gale Research Company, Climates of the States: National Oceanic and Atmospheric Administration Narrative Summaries, Table, and Maps for Each State with Overview of State Climatologist Programs, Third Edition, Volume 1: Alabama – New Mexico, 1985, pp. 83-93.

SCAQMD, 1993, 2011; USEPA, 2010a (Primary National Ambient Air Quality Standards for Nitrogen Dioxide, Final Rule, Federal Register Vol. 75, No. 6474, February 9, 2010) and 2010b (Primary National Ambient Air Quality Standard for Sulfur Dioxide, Final Rule, Federal Register Vol. 75, No. 35520, June 22, 2010).

Seinfeld and Pandis, Atmospheric Chemistry and Physics – From Air Pollution to Climate Change, John Wiley & Sons, Inc., New York, 1998, p. 59.

South Coast Air Quality Management District, CEQA Air Quality Handbook, April 1993, as updated by SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed August 23, 2016.

South Coast Air Quality Management District, Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008, p. 3-9.

South Coast Air Quality Management District, Final – Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds, October 2006, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/particulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology/final_pm2_5methodology.pdf?sfvrsn=2, accessed November 12, 2015.

South Coast Air Quality Management District, Final Localized Significance Threshold Methodology, revised July 2008. Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2, accessed July 7, 2016.

South Coast Air Quality Management District, Final Report – Multiple Air Toxics Exposure Study in the South Coast Air Basin – MATES- IV, May 2015, Available: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf?sfvrsn=7. Accessed January 19, 2017.

South Coast Air Quality Management District, General information on the original Multiple Air Toxics Exposure Study and subsequent updates conducted by South Coast Air Quality Management District, Available: http://www.aqmd.gov/home/library/air-quality-data-studies/health-studies

South Coast Air Quality Management District, Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group Meeting #8, Diamond Bar, January 28, 2009, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-8/ghg-meeting-8-minutes.pdf?sfvrsn=2, Accessed January 19, 2017.

South Coast Air Quality Management District, Minutes to Governing Board Monthly Meeting, December 5, 2008, Available: http://www3.aqmd.gov/hb/attachments/2009/January/09011AB.doc, Accessed January 19, 2017.

South Coast Air Quality Management District, Staff Report to Governing Board Monthly Meeting December 5, 2008, Available: http:// http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2, Accessed February 7, 2017.

South Coast Air Quality Management District, Multiple Air Toxics Exposure Study III Model Estimated Carcinogenic Risk, Available: http://www3.aqmd.gov/webappl/matesiii/, accessed August 11, 2016.

South Coast Air Quality Management District, Rule 1186.1 – Less-Polluting Sweepers, amended January 9, 2009; Rule 1191 – Clean On-Road Light- and Medium-Duty Public Fleet Vehicles, adopted June 16, 2000; Rule 1192 – Clean On-Road Transit Buses, adopted June 16, 2000; Rule 1193 – Clean On-Road Residential and Commercial Refuse Collection Vehicles, amended July 9, 2010; Rule 1194 – Commercial Airport Ground Access, amended October 20, 2000; and Rule 1196 – Clean On-Road Heavy-Duty Public Fleet Vehicles, amended June 6, 2008, Available: http://www.aqmd.gov/home/regulations/fleet-rules, accessed August 22, 2016.

South Coast Air Quality Management District, Rule 403 Fugitive Dust, as amended June 3, 2005, Available: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4, accessed November 12, 2015.

South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, March 2015, Available: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2, accessed August 23, 2016.

South Coast Air Quality Management District, SCAQMD Modeling Guidance for AERMOD, Available: http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/modeling-guidance, accessed July 7, 2016.

South Coast Air Quality Management District, Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics Hot Spots Information and Assessment Act (AB 2588), June 5, 2015.

South Coast Air Quality Management District, Vision for Clean Air: A Framework for Air Quality and Climate Planning, June 27, 2012, Available: http://www.aqmd.gov/home/library/clean-air-plans/vision-for-clean-air, accessed November 12, 2015.

South Coast Air Quality Management District, White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution, Appendix A: Background, August 2003, D-3.

Southern California Association of Governments, Final 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy: A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life, Adopted April 7, 2016, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx, Accessed January 19, 2017.

Southern California Association of Governments, Regional High-Occupancy Vehicle Lane System Performance Study, November 4, 2004.

State of California, Governor's Office of Planning and Research, Discussion Draft Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA, May 2015, Available: https://www.opr.ca.gov/docs/DRAFT_AB_52_Technical_Advisory.pdf, Accessed January 19, 2017.

State of California, Guidelines for California Environmental Quality Act (State CEQA Guidelines), California Code of Regulations, Title 14, Chapter 3, Sections 15000-15387.

State of California, Office of Planning and Research, Technical Advisory, CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review, June 19, 2008, p. 5, Available: http://opr.ca.gov/docs/june08-ceqa.pdf, accessed April 2013.

Supreme Court of the United States, Massachusetts et al. v. Environmental Protection Agency et. al., Available: http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf, accessed November 18, 2015.

Sutton, Mark Q., "People and Language: Defining the Takic Expansion into Southern California", Pacific Coast Archaeological Society Quarterly, 41(2&3): 31-93, 2009.

The California Gas and Electric Utilities, 2016 California Gas Report, 2016, Available: https://www.socalgas.com/regulatory/cgr.shtml.

The Climate Registry, General Reporting Protocol, Version 2.1, January 2016, Available: https://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol/, accessed January 20, 2017.

Transportation Research Board (TRB) of the National Academies, Airport Cooperative Research Board (ACRP) Report 98, Understanding Airline and Passenger Choice in Multi-Airport Regions, 2013, p17.

Transportation Research Board, Transportation Research Circular No. 212, Interim Materials on Highway Capacity, January 1980.

Unison Consulting, Inc., Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings, February 2016.

United Nations Framework Convention on Climate Change, Available: http://unfccc.int/2860.php, Accessed November 18, 2015.

United Nations Framework Convention on Climate Change, Kyoto Protocol, Available: http://unfccc.int/kyoto_protocol/items/2830.php, accessed November 18, 2015.

United States Geological Survey, National Map Viewer. Available: https://viewer.nationalmap.gov/basic/, Accessed November 28, 2016.

U.S. Department of Interior, National Park Service, National Register Bulletin 16, How to Complete the National Register Registration Form, revised 1997, Available: https://www.nps.gov/Nr/publications/bulletins/pdfs/nrb16a.pdf, Accessed January 19, 2017.

U.S. Department of Interior, National Park Service, National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation, 1995, p. 44, Available: https://www.nps.gov/NR/PUBLICATIONS/bulletins/pdfs/nrb15.pdf, Accessed January 19, 2017.

U.S. Department of Interior, National Park Service, Secretary of the Interior's Standards for Rehabilitation, Available: https://www.nps.gov/tps/standards/rehabilitation.htm, accessed September 4, 2016.

U.S. Department of Transportation, Federal Aviation Administration, Office of Environment and Energy, Order 1050.1F, Desk Reference, July 2015, Available: http://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/media/desk-ref.pdf, Accessed January 19, 2017.

U.S. Energy Information Administration, Energy-Related Carbon Dioxide Emissions at the State Level, 2000-2013, October 2015.

U.S. Energy Information Administration, Voluntary Reporting of Greenhouse Gases Program, Available: http://www.eia.gov/oiaf/1605/coefficients.html, Accessed January 19, 2017.

U.S. Environmental Protection Agency, 2011 National-Scale Air Toxics Assessment, 2015, Available: https://www.epa.gov/national-air-toxics-assessment/2011-national-air-toxics-assessment, Accessed January 19, 2017.

U.S. Environmental Protection Agency, AERMOD Version 15181, Available: https://www3.epa.gov/scram001/dispersion_prefrec.htm#aermod, Accessed January 3, 2017.

U.S. Environmental Protection Agency, Air Quality System (AQS) – AirData – Download Data Files, Available: http://aqsdr1.epa.gov/aqsweb/aqstmp/airdata/download_files.html#Raw, Accessed August 23, 2016. Downloaded hourly_42602_2015.zip, hourly_42602_2014.zip, hourly_42602_2013.zip, and hourly_42602_2012.zip.

U.S. Environmental Protection Agency, AP 42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I, Section 13.2.1, Paved Roads, January 2011, Section 13.2.2 Unpaved Roads, November 2006, Section 13.2.3 Heavy Construction Operations, January 1995, Available: https://www3.epa.gov/ttn/chief/ap42/ch13/index.html, accessed November 12, 2015.

U.S. Environmental Protection Agency, "Approval and Promulgation of Implementation Plans; Designation of Areas for Air Quality Planning Purposes; California; South Coast Air Basin; Approval of PM10 Maintenance Plan and Redesignation to Attainment for the PM10 Standard," Federal Register, Vol. 78, No. 123, June 26, 2013, pp. 38223-38226.

U.S. Environmental Protection Agency, Carbon Monoxide, Available: https://www3.epa.gov/airquality/carbonmonoxide, accessed August 23, 2016.

U.S. Environmental Protection Agency, "Clean Data Determination for 1997 PM2.5 Standards; California-South Coast; Applicability of Clean Air Act Requirements," Federal Register, Vol. 81,

U.S. Environmental Protection Agency, "Clean Data Determination for 1997 PM2.5," Federal Register vol. 81 No. 142 48350. Available: https://www.federalregister.gov/documents/2016/07/25/2016-17410/clean-data-determination-for-1997-pm25, effective August 24, 2016.

U.S. Environmental Protection Agency, "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act," Federal Register Vol. 74, No. 239, December 15, 2009, pp. 66496-66546.

U.S. Environmental Protection Agency, Glossary of Climate Change Terms, Available: www.epa.gov/climatechange/glossary.html, accessed August 31, 2016.

U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2013, April 15, 2015, Available: www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf, accessed November 30, 2015.

U.S. Environmental Protection Agency, Nitrogen Dioxide, Available: https://www3.epa.gov/airquality/nitrogenoxides, accessed, August 23, 2016.

U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Risk Assessment Guidance for Superfund, Vol. I, Human Health Evaluation Manual (Part A), Interim Final, EPA/540/1-89/002, December 1989.

U.S. Environmental Protection Agency, Ozone Pollution, Available: https://www.epa.gov/ozone-pollution, accessed August 23, 2016.

U.S. Environmental Protection Agency, Particle Pollution and Your Health, September 2003.

U.S. Environmental Protection Agency, Particulate Matter (PM) Pollution, Available: https://www.epa.gov/pm-pollution, accessed August 23, 2016.

U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010, Available: http://www3.epa.gov/otaq/climate/regulations/420f10014.pdf, Accessed November 18, 2015.

U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Adopt First-Ever program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011, Available: http://www3.epa.gov/otaq/climate/documents/420f11031.pdf, Accessed November 18, 2015.

U.S. Environmental Protection Agency, Regulatory Announcement, EPA Finalizes First Steps to Address Greenhouse Gas Emissions from Aircraft Engines, July 2016, Available: https://www3.epa.gov/otaq/documents/aviation/420f16036.pdf, accessed August 3, 2016.

U.S. Environmental Protection Agency, Sulfur Dioxide (SO2) Pollution, Available: https://www.epa.gov/so2-pollution, accessed August 23, 2016.

U.S. Environmental Protection Agency, Support Center for Regulatory Atmospheric Modeling (SCRAM), Meteorological Processors and Accessory Programs, Available: https://www3.epa.gov/scram001/metobsdata_procaccprogs.htm, accessed July 19, 2016.

U.S. Environmental Protection Agency, Support Center for Regulatory Atmospheric Modeling (SCRAM), Related Programs, Available: https://www3.epa.gov/ttn/scram/dispersion_related.htm#aersurface, accessed July 19, 2016.

U.S. Environmental Protection Agency. Green Book Nonattainment Areas. Available: http://www3.epa.gov/airquality/greenbk/index.html, Accessed May 24, 2016.

U.S. Environmental Protection Agency. Risk Assessment Guidance for Superfund (RAGS) Part A and F. Available at https://www.epa.gov/risk/risk-assessment-guidance-superfund-rags-part. Accessed on January 13, 2017.

Warren, Claude N, "Cultural Tradition and Ecological Adaptation on the Southern California Coast," In Archaic Prehistory in the Western United States, C. Irwin-Williams, ed, pp. 1-4, Eastern New Mexico University Contributions in Anthropology, Portales, 1968.

Western Regional Climate Center, Los Angeles International Airport (KLAX), CA Climatological Summary, Period of Record: Jul 1996 to Dec 2008, Available: http//www.wrcc.dri.edu/summary/lax.ca.html. Accessed August 1, 2016.

World Business Council for Sustainable Development and World Resources Institute, The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition, March 2004, Available: http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf.

7.4 NOP and Scoping Meeting Comments

A Notice of Preparation (NOP) and Initial Study (IS) was circulated for public review from August 11, 2016 to September 9, 2016. During the public review period, LAWA held a public Scoping Meeting on August 24, 2016, at Los Angeles Fire Station #5 at 8900 S. Emerson Avenue. Comment letters received from public review of the NOP/IS and comments received at the public scoping meeting are listed below. Copies of the August 11, 2016 NOP/IS, the comment letters, and public scoping meeting comments are included in Appendix A of this Draft EIR.

Commentor	Date of Correspondence
California Department of Transportation (Caltrans) – Dianna Watson/Miya Edmonson	August 22, 2016
California Native American Heritage Commission (NAHC) – Gayle Totton	August 15, 2016
County of Los Angeles, Airport Land Use Commission – Bruce Durbin	September 1, 2016
David Mannix	August 29, 2016
Edward G. Keating	August 15, 2016
Governor's Office of Planning and Research, State Clearinghouse and Planning Unit (SCH) – Scott Morgan	August 10, 2016
Los Angeles International Airport Advisory Council (LAXAAC) – William Cumming	September 9, 2016
Shute Mihaly & Weinberger LLP (City of El Segundo) – Joseph 'Seph' Petta	September 9, 2016
Los Angeles County Department of Public Heath - Terri Williams	September 12, 2016

Scoping Meeting Comments (August 24, 2016)

Bonnie Sadrpour – 91 St. Homeowners

Denny Schneider – ARSAC

Diane Sambrano - ARSAC

Janet L. Yap

Saiful Hua – AT&T Mobility

7.5 List of Acronyms

AB	assembly bill
ACA	Airport Carbon Accreditation
ACHP	Advisory Council on Historic Preservation
ACI	Airport Council International
ACTC	airport traffic control tower
ADG	Airplane Design Group
AEP	Association of Environmental Professionals
AERMOD	AMS/USEPA Regulatory Model
ALP	Airport Layout Plan
ALUC	Airport Land Use Commission
AOA	Airport Operations Area
APE	area of potential effect
APM	automated people mover
AQMP	Air Quality Management Plan
ATCM	Air Toxic Control Measure
ATP	Archaeological Treatment Plan
ATSAC	Automated Traffic Surveillance and Control
AvGas	aviation gasoline
BHS	Baggage Handling System

Basin	South Coast Air Basin
C	Celsius
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGreen	California Green Building Code
CALM	Coordination and Logistics Management
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officer Association
CARB	California Air Resources Board
CBIS	Checked Baggage Inspection System
CBP	U.S. Customs and Border Protection
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCR	California Code of Regulations
CCTV	closed-circuit television
CEC	California Energy Commission
CEIDARS	California Emission Inventory and Reporting System
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
CFTP	Crossfield Taxiway Project
CH_4	methane
CIP	Capital Improvement Projects
ClimateLA	Green LA Climate Action Plan
CMA	Critical Movement Analysis
CMP	Congestion Management Program
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CONRAC	Consolidated Rental Car Facility
CTA	Central Terminal Area
CTMP	congestion traffic management plan
CUP	Central Utilities Plant
CUP-RP	Central Utilities Plant Replacement Project
Cy	cubic yards
DOT	Department of Transportation
DPF	diesel particulate filter
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
F	Fahrenheit
FAA	U.S. Department of Transportation Federal Aviation Administration
FIS	Federal Inspection Services
g/mi	grams per mile
GCC	global climate change
GEO TIFF	geographic tiff files
GHG	greenhouse gas
GRI	Global Reporting Initiative
GRP	General Reporting Protocol
GWP	global warming potential
HARP2	Hot Spots Analysis and Reporting Program Version 2
HCM	City of Los Angeles Historic Cultural Monument

HFC	hydrofluorocarbons
HHRA	Human Health Risk Assessment
HI	hazard index
HPOZ	Historic Preservation Overlay Zone
HRG	Historic Resources Group
HTP	Hyperion Treatment Plant
I-105	Interstate 105
I-405	Interstate 405
I-605	San Gabriel Freeway
ICLEI	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
IT	information technology
ITF	intermodal transportation facility
LADBS	Los Angeles Department of Building & Safety
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LAGBC	City of Los Angeles Green Building Code
LAMC	Los Angeles Municipal Code
LAMP	Landside Access Modernization Program
LAWA	Los Angeles World Airports
LAX	Los Angeles International Airport
LEED	Leadership in Energy and Environmental Design
LGOP	Local Government Operations Protocol
LOS	level of service
LRT	light rail transit
LST	localized significance threshold
MATES	Multiple Air Toxics Exposure Study
MEI	maximally exposed individuals
Metro	Los Angeles County Metropolitan Transportation Authority
mg/m^3	milligrams per cubic meter
MMRP	Mitigation Monitoring and Reporting Program
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MSC	Midfield Satellite Concourse
msl	mean sea level
$MTCO_2e$	metric tons of carbon dioxide equivalent
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NAHC	Native American Heritage Commission
NATA	National-Scale Air Toxics Assessment
NCOS	North Central Outfall Sewer
NED	USGS National Elevation Data
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act of 1966
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOP	Notice of Preparation
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment

OFFROAD	Inventory Model database for In-Use Off-Road Construction, Industrial, Ground Support and Oil Drilling equipment
OHP	Office of Historic Preservation
OPR	California Office of Planning and Research
Pb	Lead
PBB	passenger boarding bridge
PCE	passenger car equivalent
PEL-TWAs	Permissible Exposure Limit Time Weighted-Average
PFCs	perfluorocarbons
PM_{10}	Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
PMTP	Paleontological Management Treatment Plan
ppb	parts per billion
ppm	parts per million
PVMRM	Plume Volume Molar Ratio Method
RAGS	Risk Assessment Guidance for Superfund
REL	reference exposure level
ROG	reactive organic gases
RPS	Renewable Portfolio Standards
RSA	Runway Safety Area
RSA North	Runways 6L-24R and 6R-24L RSA
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SAAP	secured area access post
SAIP	South Airfield Improvement Project
SB	senate bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCH	State Clearinghouse
sf	square foot
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPAS	LAX Specific Plan Amendment Study
SSCP	Security Screening Checkpoint
T#	Terminal #
TAC	toxic air contaminants
TBIT	Tom Bradley International Terminal
TIA	transportation impact analysis
TSA	Transportation Security Administration
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
USEPA	U.S. Environmental Protection Agency
v/c	volume to capacity
VMT	vehicle miles traveled
VOC	volatile organic compounds
VSR	vehicle service road
WAMA	West Aircraft Maintenance Area
YBP	years before present
µg/m³	microgram per cubic meter