SEPTEMBER 2016

Draft Environmental Impact Report

(DRAFT EIR)

[STATE CLEARINGHOUSE NO. 2015021014]

for Los Angeles International Airport (LAX) Landside Access Modernization Program

City of Los Angeles
Los Angeles World Airports

Los Angeles World Airports

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1. Introduction and Executive Summary

This document is a Draft Environmental Impact Report (Draft EIR) for the Los Angeles International Airport (LAX) Landside Access Modernization Program (Project). 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).

An Initial Study was prepared in February 2015 which identified the resource areas that could be subject to significant impacts from the LAX Landside Access Modernization Program (Project). Based on a preliminary review of the project site and in consideration of the proposed activities associated with the proposed Project, LAWA determined that potentially significant effects may occur in Aesthetics, Air Quality and Human Health, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology/Water Quality, Land Use/Planning, Noise, Population/Housing, Public Services, Transportation/Traffic, Utilities/Service Systems, and Mandatory Findings of Significance. As a result, these resources are evaluated further in this Draft EIR.

LAWA determined that impacts related to Agricultural and Forestry Resources, Geology and Soils, Mineral Resources, and Recreation have been found to be less than significant through the analysis in the Initial Study and were not included for further analysis (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 commentperiod associated with circulation of the Notice of Preparation (NOP) for this EIR.

1.1 Summary of the Proposed Project

1.1.1 BACKGROUND AND PROJECT OVERVIEW

Los Angeles World Airports (LAWA) is modernizing Los Angeles International Airport (LAX or "the Airport") to improve passenger quality-of-service and provide world class facilities for its customers. Recent projects, either completed or underway at LAX, are transforming the Airport. These projects include the transformation of the Tom Bradley International Terminal (TBIT) with the Bradley West project, a new Midfield Satellite Concourse west of TBIT, a new West Aircraft Maintenance Area, a new Central Utility Plant, lighting and wayfinding improvements to the passenger terminals, runway safety area improvements, renovation of Terminals 1, 5, 6, and 7, and the overhaul of all terminal concessions and retail/duty free shops. LAWA is also planning additional terminal improvements including providing secure connections between Terminals 1, 2, 3, and TBIT, as well as renovating Terminals 2 and 3. To further transform LAX into a modern airport and to address increasing levels of traffic congestion at and around LAX, LAWA is working to redevelop the ground access system to the Airport, which would include a seamless connection to the regional rail and transit system.

Today, the passenger experience for those arriving or departing LAX is often severely compromised by roadway congestion in LAX's Central Terminal Area (CTA)[1] and on nearby streets. Compounding the local traffic congestion, 12 rental car agencies operate independent shuttles to transport passengers between the CTA and their individual rental car facilities that are located throughout the surrounding area. Unlike many major U.S. airports, LAX does not have a consolidated rental car facility that provides a convenient and centralized location for airport passengers to pick-up and return cars. In 2015, there were a total of over 1.1 million rental car shuttle trips on the upper and lower level roadways of the CTA. Moreover, LAX also lacks a direct connection to the Los Angeles County Metropolitan Transportation Authority (Metro) transit system. Currently, passengers and employees who want to take public transportation to LAX must either take a bus (often requiring a transfer from the LAX City Bus Center on W. 96th Street to the LAWA-operated Lot C shuttle to reach the CTA), or take the Metro Green Line light rail to the station at Imperial Highway and Aviation Boulevard. They must then transfer to the LAWA-operated G shuttle to the Airport, which is a trip of approximately 2 miles.

Today, regardless of transportation mode, passengers, employees, and visitors face uncertain travel times, congestion and overcrowding to and from LAX. Approximately 63 percent of all departing air passengers used private vehicles, taxis, limousines, or Transportation Network Companies (TNCs) such as Uber or Lyft to get to LAX in 2015[2]; this percentage is even greater for those departing passengers who are residents. During peak periods, over 6,000 vehicles enter the Airport on an hourly basis. Some of the challenges LAX currently experiences include:

- Heavy traffic congestion during peak hours
- Buses, shuttles and cars competing for limited space
- Passengers stuck in crowded and uncomfortable conditions along a narrow curb

Each terminal has an arrivals and departures curb where people can be picked-up or dropped-off, along with parking structures located within the interior of the roadway loop. Passengers and visitors at LAX who drive private vehicles through World Way, the single roadway loop in the CTA, often struggle to reach the curb in front of their terminal or parking structure because of the myriad of commercial shuttle buses and other vehicles in the CTA. Some passengers, who choose to park remotely, stay in local hotels, or take public transit to LAX, must take a bus, shuttle, taxi or similar service into the CTA to the appropriate terminal. The hotel, off-

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1 The CTA refers to the main passenger accessible features of the airport that consists of terminals/concourses and parking encircled by a roadway system.

2 Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings*, February 2016.

Airport parking, and rental car shuttles circle the main upper level roadway (World Way) to drop-off passengers and then circle the lower level roadway to pick-up passengers, adding to overall congestion within the CTA. In addition to private vehicles and hotel and car rental shuttles, LAX is served by other passenger transportation modes, such as FlyAway[3] buses, shared ride vans, limousines, and other commercial vehicles, all competing for limited space along the drop-off and pick-up curbs. All of these vehicles contribute to congestion on the surrounding roadways, which results in increased traffic in the neighboring communities.

1.1.1.1 Evolution of the LAX Landside Access Modernization Program

The shortcomings of the current LAX landside[4] access system have long been identified by LAWA. In the 2004 LAX Master Plan, LAWA sought to address these congestion problems by proposing transportation facilities that would provide new options for passengers and employees to access the passenger terminal areas. These facilities, which were approved at a programmatic level in 2004, included a ground transportation center and an intermodal transportation center located outside the CTA; these centers were to be served by an automated people mover (APM) system. To respond to post 9/11 concerns, the LAX Master Plan's Preferred Alternative required passengers and employees to be picked-up or dropped-off without driving into the CTA. Additionally, the 2004 LAX Master Plan identified a need for a consolidated rental car facility, which was located outside the CTA and also connected to the APM system.

In its 2005 Record of Decision (ROD),[5] the Federal Aviation Administration (FAA) approved the ground transportation improvements as described in the approved LAX Master Plan and as depicted on the LAX Airport Layout Plan (ALP) adopted in connection with the ROD. LAWA has since refined these projects as the LAX Landside Access Modernization Program, in part to be consistent with updated regional transit plans for the region and to address stakeholder feedback. As part of the required environmental review process for the LAX Landside Access Modernization Program, as of June 22, 2016, the FAA has initiated environmental review in compliance with the National Environmental Policy Act (NEPA) and other federal requirements. Because the proposed LAX Landside Access Modernization Program is not the same project evaluated in the 2004 LAX Master Plan or the associated Final Environmental Impact Statement/Final Environmental Impact Report, the Project is being analyzed as a stand-alone project under a separate environmental review.

In connection with approval of the LAX Master Plan Program in December 2004, the City Council approved the LAX Specific Plan.[6] The LAX Specific Plan contains zoning and land use regulations and procedures for the

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3 A FlyAway is a facility which allows airline passengers and employees to park nearer to their point of origin and board a LAWA-operated bus to the airport.

4 Airports are generally divided into landside and airside areas. Landside areas are accessible to the public and include roadway networks, parking lots, rental car operations, and public transportation facilities. Airside areas are restricted areas 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 service roads.

5 U.S. Department of Transportation, Federal Aviation Administration, *Record of Decision, Proposed LAX Master Plan Improvements,* May 20, 2005, Available: http://www.faa.gov/airports/environmental/records_decision/lax/#lax05, accessed August 25, 2016.

6 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

processing of future individual projects and activities anticipated under the LAX Master Plan Program to ensure consistency with the LAX Plan[7] – the City of Los Angeles' general plan component for LAX – and to ensure the adequacy of environmental review and documentation of those individual projects. Section 7.H of the LAX Specific Plan (as approved in 2004) required LAWA to complete a "Specific Plan Amendment Study" and re-evaluate certain "Yellow Light" Master Plan projects, including the development of the Ground Transportation Center (GTC), and construction of the APM from the GTC to the CTA, prior to pursuing implementation of such projects and seeking a determination of compliance with the LAX Plan.

LAWA completed the Specific Plan Amendment Study (SPAS)[8] and a Program Final EIR[9] evaluating the environmental effects of the SPAS alternatives in 2013. The SPAS comprehensively addressed potential alternative designs, technologies, and configurations for certain LAX Master Plan projects identified as the "Yellow Light" Master Plan projects, subject to additional planning and environmental review prior to implementation. The SPAS studied airfield improvements, terminal improvements, and ground access improvements, including alternatives to the GTC and construction of the APM from the GTC to the CTA as envisioned in the LAX Master Plan, at a programmatic level. Following completion of the SPAS and certification of the SPAS Final EIR, the Board of Airport Commissioners (BOAC) and the Los Angeles City Council selected the LAWA "Staff Recommended Alternative" as the best alternative to the problems the Yellow Light projects were designed to address, subject to future detailed planning, engineering, and project-level environmental review. The LAX ground access improvements selected for further study as part of the Staff Recommended Alternative included, among other things, development of an Intermodal Transportation Facility (ITF), Consolidated Rental Car Facility (CONRAC), parking outside of the CTA, and an APM linking these new facilities to the CTA and connecting them to the planned Metro facilities. These components form the conceptual framework of the proposed LAX Landside Access Modernization Program.

Although components of the LAX Landside Access Modernization Program were contained in the LAX Master Plan and the LAX Specific Plan Amendment Study, the proposed Project for ground access improvements at LAX has substantively evolved from the programmatic plans contained in these previous program level documents, and the proposed LAX Landside Access Modernization Program is substantively different from the ground access improvements evaluated in the 2004 LAX Master Plan and the associated Final Environmental Impact Statement/Final Environmental Impact Report. Thus, because the current plan evaluated in this Environmental Impact Report (EIR) substantively differs from programmatic concepts in the LAX Master Plan and SPAS, this EIR does not tier off of the environmental documents associated with those plans; it is a stand-alone analysis of LAWA's current project –level plans for ground access improvements at LAX. Because the LAX Landside Access Modernization Program does not tier off of the LAX Master Plan EIR and is a

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7 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

8 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.

9 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.

substantively different project, this Project is not considered an LAX Master Plan project and is not subject to the LAX Master Plan commitments and mitigation measures; thus, LAWA has identified mitigation measures specific to this Project as appropriate. The LAX Master Plan commitments and mitigation measures are still in effect for all Master Plan projects, just as other project-specific mitigation measures are in effect for other non-LAX Master Plan projects.

1.1.1.2 Proposed LAX Landside Access Modernization Program

As part of the overall modernization of LAX, LAWA proposes to implement the LAX Landside Access Modernization Program to continue to advance and transform LAX's access system. The LAX Landside Access Modernization Program ("Project") seeks to improve access options and the travel experience for passengers; shift the location where different modes of traffic operate within the CTA and on the surrounding street network; and provide a direct connection to the Metro rail and transit system. By implementing this Project, LAWA seeks to provide more travel time certainty, reduce traffic congestion and improve air quality in and around the Airport.

The proposed Project includes several individual components that collectively would improve access to and from LAX. These components include an APM system, ITFs, CONRAC, pedestrian walkway connections to the passenger terminals within the CTA, and roadway improvements. In addition, LAWA proposes to implement changes to its policies and procedures in regards to commercial vehicle operations and plans to establish and enhance programs to encourage airport and other employees to use alternative means of transportation.

Metro is independently working on a connection to the airport along the Metro Crenshaw/LAX light rail line at their proposed Airport Metro Connector (AMC) 96th Street Transit Station to be located at Aviation Boulevard and 96th Street, about 1.5 miles east of the entry to the CTA. LAWA proposes to provide a direct connection from the APM to Metro's station at W. 96th Street, allowing passengers to seamlessly transition between the airport APM and the Metro transit system. Metro released a Draft EIR assessing the potential environmental effects of the proposed Airport Metro Connector (AMC) 96th Street Transit Station in June 2016.[10]

Upon Project implementation, the APM system would offer passengers an opportunity to bypass the existing roadway loop in the CTA. Departing passengers would be able to access the APM system from the ITFs, the CONRAC, or the Metro station. The ITFs and CONRAC would serve as new points of access to LAX, catering to all types of Airport passengers and users. The process would be seamless for arriving passengers as well. Arriving passengers would be able to pick-up their baggage, board the APM system, and be quickly and efficiently conveyed directly to the ITFs, CONRAC, or the Metro AMC 96th Street Transit Station.

Public access into the CTA in the future would continue to function the way it does today. However, the purpose of the APM system is to reduce the number of commercial and private vehicles within the CTA, which would result in improved traffic flows on CTA and surrounding roadways, as well as fewer vehicle miles

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10 Los Angeles County Metropolitan Transportation Authority (Metro), *Airport Metro Connector 96th Street Transit Station, Draft Environmental Impact Report*, June 2016.

travelled and vehicle hours travelled. The APM system would provide passengers several different options on how to access LAX and would give LAWA the ability to implement pricing strategies, policies, and procedures that would result in a reduced number of vehicles in the CTA. The proposed APM would consist of a fixed guideway transportation system that would provide free access to the CTA for passengers, employees, and other users of LAX, 24 hours a day. Constructed completely above grade, the APM would connect to the passenger terminals in the CTA through a pedestrian walkway system located above the existing roads and curb areas in the CTA.

The APM would transport passengers between the passenger terminals and the other main components of the Project located east of the CTA, including a CONRAC facility, new public parking facilities, and locations for passenger pick-up and drop-off at the ITF East and the ITF West, as well as Metro's proposed AMC 96th Street Transit Station. The ITFs would provide access to the terminals for those that choose to drive their vehicle to LAX and park, including both long- and short-term parking. In addition, the ITFs would have designated space for commercial transportation providers, including, but not limited to, off-airport parking operators, long-distance shuttle operators, and hotel shuttles. The ITFs would enable passengers to access commercial transportation providers while eliminating the need for the providers to enter and circle through the CTA. The ITFs may include amenities and concessions for passengers, would offer long- and short-term parking options with close proximity to the APM system, provide new meet and greet locations for arriving passengers, and kiss and ride areas for departing passengers. In addition, various roadway improvements would accommodate the APM system, the CONRAC, and ITFs, and improve overall traffic circulation and vehicle access to and from LAX from all directions.

The Project would necessitate amendments to the LAX Specific Plan; the LAX Plan; the Westchester-Playa del Rey Community Plan; and the Mobility Plan 2035, the Transportation Element of the City of Los Angeles General Plan. These plan amendments, although not limited to those required to implement the proposed Project, would reflect updated Specific Plan boundaries and the location of the Project components, promote pedestrian and multi-modal activities that would support trip reduction strategies, including transit use to LAX, and enable implementation of the proposed Project. The proposed Project would also require the subdivision of parcels, creation of new tract maps, and/or other reconfiguration of parcels, the dedication and vacation of certain public rights-of-way, and zoning change approvals.

LAWA would utilize adjacent land for construction staging, construction activities, and/or temporary relocation areas to build the APM, CONRAC, ITFs, roadway improvements and other Project elements. Once the APM, CONRAC, and ITFs are constructed and operational, which is anticipated by early 2024, additional future complementary development may occur on land owned by LAWA located adjacent to these facilities. Such future development is envisioned to support the needs of passengers, visitors, employees, and guests of hotels in the area. Because no specific development projects are proposed for these areas, certain assumptions concerning this potential future related development are identified, and impacts are assessed in this EIR at a program level. Accordingly, such future related development would be subject to subsequent environmental review once LAWA develops more detailed and definitive plans for these areas.

1.1.2 PROJECT LOCATION

LAX is located at the western edge of the City of Los Angeles (see **Figure 1-1**) within a developed, urbanized region consisting of airport, commercial, and residential areas. In addition, the region contains other transportation facilities, including interstate highways and regional rail facilities. To the north of LAX are the communities of Westchester and Playa del Rey in the City of Los Angeles; to the east are the City of Inglewood, City of Hawthorne, and unincorporated areas under the jurisdiction of Los Angeles County; to the south is the City of El Segundo; and to the west is the Pacific Ocean. Regional access to LAX is provided by the San Diego Freeway (Interstate 405 or I-405), which is a north-south freeway located east of LAX, and the Century Freeway (Interstate 105 or I-105), which is an east-west freeway, located south of LAX. Major roadways serving LAX include Century Boulevard, Imperial Highway, Westchester Parkway/W. Arbor Vitae Street and Lincoln Boulevard/Sepulveda Boulevard (State Route 1).

1.1.3 PROJECT OBJECTIVES

Section 15124(b) of the State CEQA Guidelines states that the Project Description shall contain "[a] statement of the objectives sought by the proposed project." In addition, Section 15124(b) of the State CEQA Guidelines further states, "[t]he statement of objectives should include the underlying purpose of the project."

The LAX Landside Access Modernization Program would support the ongoing modernization of LAX by improving the landside transportation system serving the Airport and improving the passenger and visitor experience. LAX is the world's busiest origin and destination airport; more passengers begin and end their trip at LAX than at any other airport. In 2015, LAX handled 655,564 aircraft landings and takeoffs and 74.9 million passengers (the third busiest airport in the United States, and the seventh busiest in the world)[11]. Limited options for ground vehicles to enter the CTA currently result in more time spent in traffic, uncertain travel times, congestion and delay in the CTA, as well as back-ups onto the surrounding local and regional roadway network. The large number of shuttles serving rental car agencies, hotels, and parking facilities located in the LAX vicinity contributes to congestion in the CTA and surrounding area. Compounding the congestion problem at LAX is the lack of a direct and convenient connection to transit.

The underlying purposes of the proposed Project are to improve access to LAX and relieve congestion on Airport and surrounding roadways. The Project objectives for the LAX Landside Access Modernization Program that support the underlying purposes are:

(a) Enhance the passenger experience by providing new access options for all modes of travel, including direct connections to transit, convenient parking, and commercial vehicles;

(b) Provide easier and more efficient access to rental cars and non-CTA parking facilities;

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[11] Los Angeles World Airports, "Traffic Comparison (TCOM) Los Angeles International Airport, Calendar YTD January to December 2015," January 22, 2016, Available: http://www.lawa.org/uploadedfiles/LAX/statistics/tcom-1215.pdf; Los Angeles World Airports, "LAX Passenger Traffic Comparison by Terminal, January to December 2014/2015," Available: http://www.lawa.org/uploadedfiles/LAX/statistics/m_share-2015.pdf.

(c) Relieve congestion at LAX and on the surrounding street system by developing a flexible transportation system that provides alternatives to the CTA for passengers, airport and other employees, and airport-related vendors accessing LAX;

(d) Promote the sustainability of LAX by improving the efficiency and operation of the surface transportation system in which LAX operates;

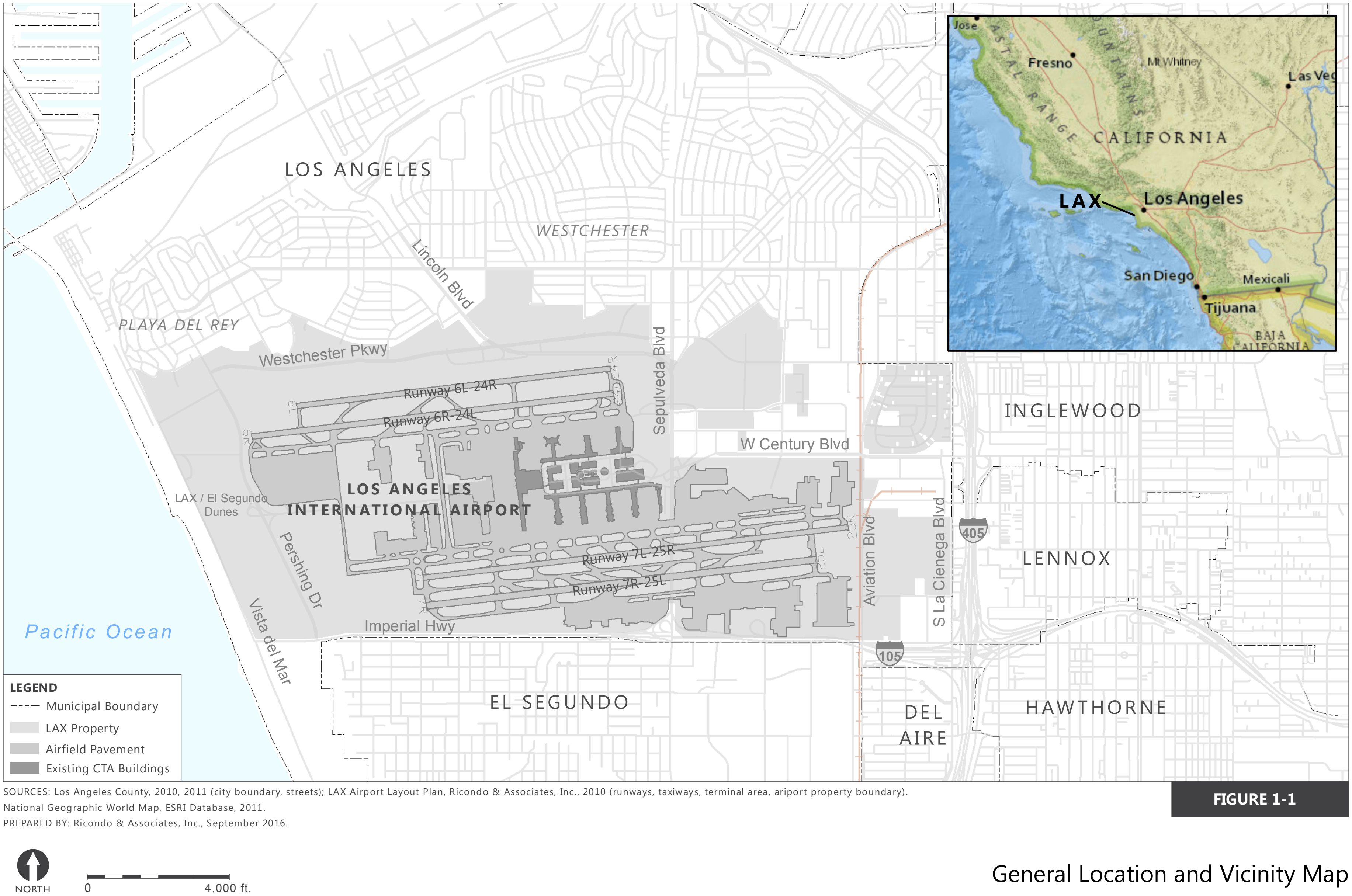
(e) Enhance and integrate the overall design of LAX Landside Access Modernization Program facilities with existing CTA structures and new airport facilities both inside and outside the CTA;

(f) Maintain airport operations during construction; and

(g) Ensure the highest and best use for reuse of any potential future surplus property in compliance with FAA grant obligations.

These objectives are consistent with the following general goals LAWA has established for LAX as part of its sustainability program and policies that strive to minimize the impact of LAX operations on the surrounding communities:

- Build new efficient transportation facilities that conserve energy, water, and other resources.
- Reduce traffic congestion and vehicle miles traveled, thereby improving air quality.
- Reduce air emissions from transportation sources to comply with Senate Bill (SB) 375.
- Design and construct the new transportation facilities in a manner that minimizes disruptions to airport operations.
- Design and construct the new transportation facilities in a manner that integrates with existing and new airport facilities.
- Utilize airport property located next to the new transportation facilities for construction staging, construction activities, and/or temporary relocation areas to build the APM, CONRAC, ITFs, roadway improvements, and other Project elements. Upon completion of the new transportation facilities, consider new uses complementary to LAX and the surrounding uses that meet the needs of passengers, visitors, employees, and guests of hotels in the area.
- Generate additional employment opportunities and economic activity that benefit the communities located around LAX and the City of Los Angeles.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary).
National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 1-1

General Location and Vicinity Map

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1.1.4 PROJECT CHARACTERISTICS

The proposed Project includes the following components:

- An APM system with six APM stations connecting the CTA via an above-grade fixed guideway to new proposed ground transportation facilities;
  - Passenger walkway systems connecting the APM stations to passenger terminals, parking garages, and ground transportation facilities;
  - Modifications to existing passenger terminals and parking garages to support the APM walkway system connections, including vertical circulation (elevators, escalators, and stairs) cores to garage levels and to the arrival, departure, and concourse levels at the terminals;
  - An APM maintenance and storage facility (MSF);
  - APM power substations;
- A CONRAC designed to meet the needs of rental car agencies serving LAX with access to the CTA via the APM;
- Two ITFs providing airport parking and pick-up and drop-off areas outside the CTA for private vehicles and commercial shuttles;
- Roadway improvements designed to improve access to the proposed facilities and the CTA and reduce traffic congestion in neighboring communities;
- Security features, including security fencing, surveillance cameras, security lighting, and emergency phones/call boxes, to reduce demands on the Los Angeles World Airports Police Department (LAWAPD);
- Fire safety features in compliance with fire and building code requirements including fire hydrants, fire sprinklers, and fire extinguishers;
- Utilities infrastructure, both new and modified to support the proposed Project;
- Changes to pricing, policies and procedures in regards to vehicle operations at LAX;
- Incorporation of the LAX Design Guidelines into the proposed Project (see **Appendix B**);
- Land acquisition, subdivision of parcels, creation of new tract maps, and/or other reconfiguration of parcels, dedications and vacations of public rights-of-way, as well as zoning change approvals;
- Future potential related development on land owned by LAWA located adjacent to the new proposed ground transportation facilities; and
- Enabling projects to allow construction of the proposed Project, including utility relocation and demolition of certain existing facilities, some of which would be reconstructed.

Figure 1-2 provides an illustration of the elements associated with the proposed Project.

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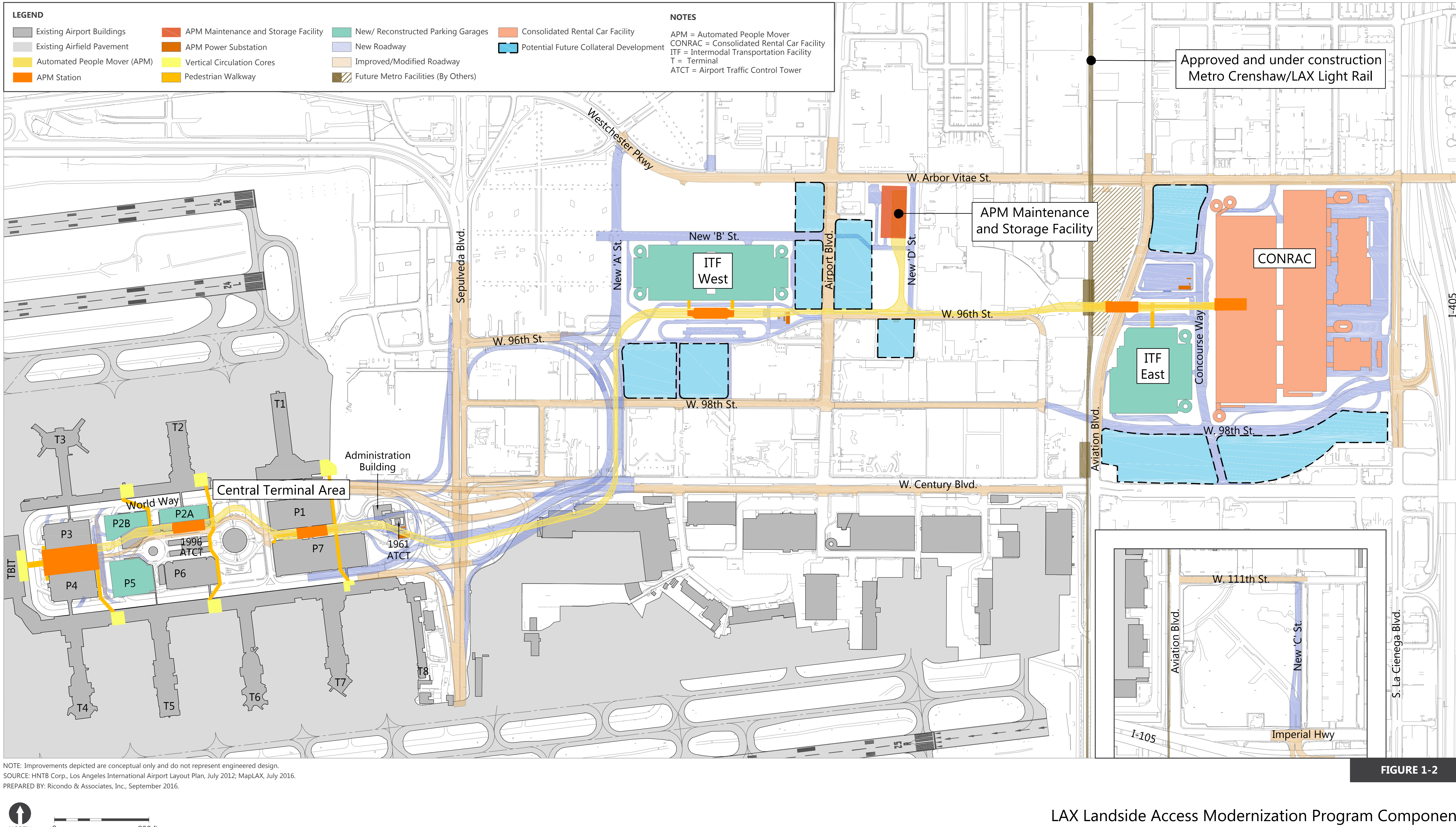

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 1-2

LAX Landside Access Modernization Program Components

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1.2 Purpose of this Draft EIR

Since the Initial Study determined that the proposed Project may have a significant effect on the environment, the State *CEQA Guidelines* require 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 eliminate any significant adverse environmental impacts or reduce the impacts to less-than-significant levels;
- 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;
- To provide a basis for preparation of any future environmental documents; and
- To facilitate responsible agencies in issuing permits and approvals for the proposed Project.

According to CEQA and the State *CEQA Guidelines*, public agencies must avoid or lessen significant environmental impacts where feasible. Where impacts cannot be mitigated to less-than-significant levels, public agencies have an obligation to balance the project's significant impacts on the environment against other factors, including economic, social, technological, legal, and other benefits.

LAWA must certify the EIR before approving the proposed Project. Upon certification, the EIR will serve as the base environmental document for LAWA and will be used as a basis for decisions on implementation of the proposed Project. Other agencies may also use this EIR in their review and approval processes.

This 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.

1.3 Organization of this Draft EIR

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

1. Introduction and Executive Summary. Chapter 1 describes the background and evolution of the proposed Project; relationship to other LAX documents; CEQA compliance requirements; the environmental review process; Initial Study/NOP; the organization of the Draft EIR; intended uses of the Draft EIR; availability of the Draft EIR; and includes an Executive Summary that presents a brief summary of the proposed Project (including Project objectives), impacts, mitigation measures, and areas of controversy known to the Lead Agency.

2. Description of the Proposed Project. Chapter 2 describes the boundaries of the proposed Project, proposed Project components, the proposed objectives, a list of the agencies expected to use this Draft EIR, proposed Project permits and other discretionary actions, and a list of related environmental review and consultation requirements.

3. Overview of Project Setting. Chapter 3 provides an overview of the existing environmental setting at and around the proposed Project sites, and describes other projects proposed in the nearby area that may, in conjunction with the proposed Project, need to be considered in order to assess cumulative impacts.

4. Environmental Impact Analysis. Chapter 4 describes the existing conditions; methodology used in the impact analysis; thresholds of significance; impacts that would result from the proposed Project; applicable mitigation measures that would eliminate or reduce significant impacts; the residual impacts after mitigation for each environmental issue; and cumulative impacts. The chapter addresses thirteen main topics:

Section 4.1	Aesthetics
Section 4.2	Air Quality and Human Health Risk
Section 4.3	Biological Resources
Section 4.4	Cultural Resources
Section 4.5	Greenhouse Gas Emissions
Section 4.6	Hazards and Hazardous Materials
Section 4.7	Hydrology, Water Quality, and Groundwater
Section 4.8	Land Use and Planning
Section 4.9	Noise
Section 4.10	Population and Housing
Section 4.11	Public Services
Section 4.12	Transportation/Traffic
Section 4.13	Utilities and Service Systems

5. Alternatives. As required by CEQA, Chapter 5 identifies and evaluates potentially feasible alternatives that would avoid or substantially lessen any significant effects of the proposed Project while still meeting most of the project objectives.

6. Other Environmental Considerations. Chapter 6 includes a discussion of issues required by CEQA that are not covered in Chapter 4. This includes growth-inducing impacts, irreversible environmental changes, and unavoidable significant impacts.

7. Plan Amendments. Chapter 7 provides a summary of the amendments to the LAX Plan and LAX Specific Plan proposed under the Project. This includes Purpose of the Plan, Goals and Objectives, Policies and Programs, and Implementation. An environmental evaluation for each resource topic is provided for the plan amendments.

8. List of Preparers, Parties to Whom Sent, References, NOP Comments, and List of Acronyms. Chapter 8 provides the following: a list of the individuals from the City of Los Angeles and contractors that performed key roles in the preparation and development of this Draft EIR; 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 a bibliography of documents used in the preparation of the Draft EIR; a list of agencies, organizations and individuals who provided comments on the NOP; and a list of acronyms used in the Draft EIR.

All documents listed in the Section 8.3, *References*, of Chapter 8 are available for public inspection at the following location:

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

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 (NOP), Initial Study and Distribution List, Scoping Meeting Materials, NOP Comments

Appendix B – LAX Design Guidelines

Appendix C – LAX Plan Revisions

Appendix D – LAX Specific Plan Revisions

Appendix E – Existing Conditions Photographs

Appendix F – Air Quality, Greenhouse Gas, and Human Health Risk Assessment

Appendix G – Tree Surveys

Appendix H – Historic Resources Technical Report

Appendix I – Archaeological and Paloeontological Resources Assessment Report

Appendix J – LAX Preservation Plan

Appendix K – Hazardous Materials Assessment

Appendix L – Hydrology and Water Quality Technical Report

Appendix M – Noise and Vibration

Appendix N – On-Airport Traffic

Appendix O – Off-Airport Traffic Study

Appendix P – Construction Traffic

Appendix Q – Water Supply Assessment

1.4 Summary of Environmental Impacts

Based on the Initial Study (February 2015), LAWA determined that preparation of an EIR was required because the proposed Project and potential future related development of the proposed Project could have potentially significant impacts on Aesthetics, Air Quality and Human Health, Biological Resources, Cultural Resources, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use/Planning, Noise, Population/Housing, Public Services, Transportation/Traffic, Utilities/Service Systems, as well as Mandatory Findings of Significance.

Impacts related to Agricultural and Forestry Resources, Geology and Soils, Mineral Resources, and Recreation have been found to be less than significant through the analysis in the Initial Study. These environmental topics are not evaluated further in this Draft EIR.

Table 1-1 presents a summary of findings for each of the resources analyzed in this EIR for the proposed Project. Resources were also analyzed at a programmatic level for the potential future related development of the proposed Project; these results are discussed in Section 1.4.2. A summary of impacts for each resource category is presented below. Detailed analysis is included in Chapter 4, *Environmental Impact Analysis*.

[Draft]

Table 1-1 (1 of 2): Significant Impacts of the Proposed LAX Landside Access Modernization Program Project

RESOURCE CATEGORY	PROPOSED PROGRAM (BEFORE MITIGATION)	PROPOSED MITIGATION?	PROPOSED PROGRAM (AFTER MITIGATION)
Aesthetics			
Visual Character	Significant	Yes	Significant and Unavoidable
Shading	Less than Significant	No	Less than Significant
Light and Glare	Less than Significant	No	Less than Significant
Air Quality			
Construction	Significant (VOC, NO_x, NO_2, PM_{10})	Yes	Significant and Unavoidable (VOC, NO_x, PM_{10})
Operations	Significant (PM_{10})	Yes	Significant and Unavoidable (PM_{10})
Human Health			
Construction	Significant (Cancer risks)	Yes	Less than Significant
Operations	Less than Significant	Yes	Less than Significant
Biological Resources			
Construction	Significant	Yes	Less than Significant
Operations	Less than Significant	No	Less than Significant
Cultural Resources			
Historic Resources	Significant	Yes	Significant and Unavoidable
Archaeological Resources	Potentially Significant	Yes	Less than Significant
Paleontological Resources	Potentially Significant	Yes	Less than Significant
Human Remains	Less than Significant	No	Less than Significant
Greenhouse Gas Emissions			
No Net Increase (quantifiable)	Less than Significant	No	Less than Significant
Plan/Policy Consistency	Significant	Yes	Significant and Unavoidable
Hazards and Hazardous Materials			
Unauthorized and Uncontrolled Release	Less than Significant	No	Less than Significant
Exposure of Workers	Less than Significant	No	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	No	Less than Significant
Interfere with Ongoing Remediation	Significant	Yes	Less than Significant
Interfere with Emergency Response or Emergency Evacuation Plan	Significant	Yes	Less than Significant

Table 1-1 (2 of 2): Significant Impacts of the Proposed LAX Landside Access Modernization Program Project

RESOURCE CATEGORY	PROPOSED PROGRAM (BEFORE MITIGATION)	PROPOSED MITIGATION?	PROPOSED PROGRAM (AFTER MITIGATION)
Hydrology, Water Quality, and Groundwater			
Hydrology	Significant	Yes	Less than Significant
Water Quality	Less than Significant	No	Less than Significant
Groundwater	Less than Significant	No	Less than Significant
Land Use and Planning	Less than Significant	No	Less than Significant
Noise			
Road Traffic Noise	Less than Significant	No	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Significant	Yes	Less than Significant
Transit Noise and Vibration	Less than Significant	No	Less than Significant
Population and Housing	Less than Significant	No	Less than Significant
Public Services			
Fire Protection	Significant	Yes	Less than Significant
Law Enforcement	Significant	Yes	Less than Significant
Schools	Significant	Yes	Significant and Unavoidable
Transportation/ Traffic			
On-Airport Traffic	Less than Significant	No	Less than Significant
Off-Airport Traffic	Significant	Yes	2024 – Less than Significant 2035 - Significant and Unavoidable
Construction Traffic	Significant	Yes	Significant and Unavoidable
Utilities and Service Systems and Energy			
Energy	Less than Significant	No	Less than Significant
Water	Less than Significant	No	Less than Significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

1.4.1 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM PROJECT

1.4.1.1 Aesthetics

Section 4.1, *Aesthetics*, evaluates the impacts of the proposed Project on aesthetics and visual character, obstruction of views, nighttime illumination, light and glare, and shading. The evaluation of aesthetics and visual character impacts considers the existing visual character of the Project site and surrounding area, as well as how implementation of the proposed Project would affect this visual character. The evaluation of view impacts considers the existing viewsheds and known visual resources (including scenic highways and landmarks) that may be affected by the development of the Project site. The analysis of light and glare assesses the effects of new sources of nighttime lighting and glare from the reflection of sunlight or artificial light from any reflective surface that would be established on the Project site. Section 4.1 also evaluates patterns of shading that would be created by the maximum development of the proposed Project and the effect on any surrounding sensitive uses.

1.4.1.1.1 Visual Character

The CTA and other Airport Landside uses are distinguished by a highly-built environment comprised of a variety of architectural styles and building materials, a high level of continuous vehicle and pedestrian activities, as well as numerous ongoing construction activities. The proposed Project would conform to this existing environment by introducing elements of the Modern architectural design that are appropriate for an airport destination area providing services to Airport passengers. A variety of edge and landscape treatments would also be incorporated into the design of the Project, in accordance with the LAX Design Guidelines (see Appendix B) and the Century Boulevard Streetscape Plan, to create a cohesive, attractive, and functional environment for multiple users of the Airport. As such, the proposed Project would create a visual continuity of streetscapes that would encourage pedestrian activity and consistency of quality airport and related uses. This visual enhancement would support the function of a transportation-oriented environment near the Airport that would be conducive with the Airport's image as a gateway to the City of Los Angeles. Therefore, as the Project site does not contain notable views or valued aesthetic resources, the development of the proposed Project components would not obstruct, interrupt, or diminish a valued focal or panoramic view from any designated scenic highway, corridor, or parkway. The proposed Project would not substantially contrast with the visual character of the surrounding area and its aesthetic image or cause an inconsistency with applicable design guidelines.

However, development of the APM guideway and pedestrian walkways adjacent to the LAX Theme Building would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.). Implementation of Mitigation Measure MM-A (LAMP)-1, Application of Design Features to Protect Aesthetic Context of Theme Building, described in Section 4.1, *Aesthetics*, would reduce impacts to views of the Theme Building. While application of mitigation would lessen the visual impact of the APM guideway to the Theme Building, impacts would be significant and unavoidable.

1.4.1.1.2 Shading

The proposed Project would introduce new structures and facilities that would have the potential to cast shadows on surrounding uses. However, shading impacts would be consistent with the existing character of the highly developed area, which contains many sources of shading. Based on the location of the closest shade-sensitive uses, the proposed Project would not affect any shade-sensitive uses. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading.

1.4.1.1.3 Light and Glare

The proposed Project components would introduce new sources of light and glare to the Project site, including poles and fixtures along the APM guideway, building entrance and, walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. These sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of a modern airport transportation area. The proposed Project would comply with the LAX Design Guidelines to minimize lighting spillover onto surrounding uses and would incorporate low-reflective materials to minimize any introduced sources of glare within the area. The proposed Project would also adhere to LAMC requirements to reduce lighting and glare impacts and potential airport hazards. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare.

1.4.1.2 Air Quality and Human Health

1.4.1.2.1 Air Quality

Section 4.2, *Air Quality and Human Health Risk*, examines air quality emissions that would result from construction and operations associated with the proposed Project. Prior to mitigation, the proposed Project would result in the following significant impacts:

- Construction-related regional emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_X).
- Construction-related local concentrations of NO_2 and PM_{10}.
- Operations-related local concentrations of PM_{10}.

However, through implementation of Mitigation Measure MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, Construction-Related Air Quality Control Measures, LAX-AQ-2, Transportation-Related Air Quality Control Measures, and LAX-AQ-3, Operations-Related Air Quality Control Measures, significant impacts would be reduced. However, remaining significant and unavoidable impacts are as follows:

- Construction-related regional emissions of VOC and nitrogen oxides NO_X.
- Construction-related local concentrations of PM_{10}.
- Operations-related local concentrations of PM_{10}.
- Cumulatively considerable contribution to significant cumulative construction-related air quality impacts, based on significant construction-related Project impacts summarized above.
- Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related Project impacts summarized above.

1.4.1.2.2 Human Health

Section 4.2, *Air Quality and Human Health Risk*, also includes a Human Health Risk Assessment (HHRA) and health impact analysis to assess incremental changes to health impacts for people exposed to toxic air contaminants (TAC) resulting from construction and operations associated with the proposed Project. The HHRA and health impact analysis disclose whether the proposed Project would increase health risks for people living, working, recreating, or attending school near LAX. Prior to mitigation, the proposed Project would result in the following significant impacts:

- Incremental cancer risks associated with unmitigated construction of the proposed Project would be above the threshold of significance of 10 in one million for child resident, school child, and adult resident. Incremental cancer risk impacts from construction would be significant.

However, through implementation of Mitigation Measure MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, Construction-Related Air Quality Control Measures, LAX-AQ-2, Transportation-Related Air Quality Control Measures, and LAX-AQ-3, Operations-Related Air Quality Control Measures, plus a commitment to 40 percent of the off-road construction equipment used on the Project meeting Tier 4 Final standards, 40 percent meeting Tier 4 Interim Standards, and the remaining 20 percent meeting Tier 3 standards – with 50 percent of Tier 3 compliant equipment installed with Level 3 VDECS particulate filters, significant impacts would be reduced to less than significant.

1.4.1.3 Biological Resources

The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. However, various roadways within or adjacent to the Project site are lined with mature trees that could harbor raptor and other native birds and their nests. During construction of the proposed Project, approximately 900 trees would be removed from the area, resulting in a potentially significant impact related to nesting birds/raptors. However, through implementation of Standard Control Measures (Mitigation Measures) LAX-BR-1, Conservation of Faunal Resources: Nesting Birds/Raptors, and LAX-BR-2, Conservation of Floral Resources: Mature Tree Replacement – Nesting Birds, as well as LAX-A-1, Lighting Controls, described in Section 4.3, *Biological Resources*, impacts would be reduced to less than significant.

The proposed Project would not create a significant change in habitat value or nesting sites. The proposed Project would involve the construction of new buildings, some of which would have windows that could pose obstacles to migratory birds. However, as there are no native or nonnative vegetated corridors in the proximity of the proposed Project, the potential impact of these structures on migratory birds is anticipated to be minimal. Additionally, lighting of these structures would be consistent with the lighting already in place in these areas and would be directed downward, minimizing the potential for these facilities to attract or disorient nocturnal migrating birds. As discussed in Section 4.3, *Biological Resources*, implementation of Standard Control Measures (Mitigation Measures) LAX-A-1, Lighting Controls, LAX-BR-1, Conservation of Faunal Resources: Nesting Birds/Raptors, and LAX-BR-2, Conservation of Floral Resources: Mature Tree

Replacement – Nesting Raptors, would further reduce impacts from glare and unnecessary lighting spillover and loss of mature trees. The proposed Project would not diminish the chances for long-term survival of bird species or their habitats. Impacts would be less than significant.

1.4.1.4 Cultural Resources

The proposed Project would include the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. Development of the APM guideway and pedestrian walkways adjacent to the LAX Theme Building would alter the immediate setting of the Theme Building in a way that would reduce its ability to convey its historic significance, resulting in a significant impact. However, as discussed in Section 4.4, *Cultural Resources*, Mitigation Measure LAX-HR (LAMP)-1, Preservation of Historic Resources: Theme Building and Setting, would be implemented to guide the preservation and future use of the Theme Building and to ensure that it is visually distinguished from the proposed new construction to maximize its level of visual prominence in the CTA. As such, impacts to historic resources would be reduced, but not to a level that would be less than significant.

Although the proposed Project would not result in the demolition of any historic building, it is possible that during construction, the demolition of the Administration Building could damage, destroy, or reduce the integrity or significance of the 1961 ATCT. However, Mitigation Measure MM-HR (LAMP)-2, Protection of 1961 Airport Traffic Control Tower, would be implemented to protect the 1961 ATCT from impacts during demolition of the Administration Building and construction of the APM guideway. Impacts to the 1961 ATCT would be less than significant.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological and paleontological resources, and human remains, with the incorporation of Standard Control Measures (Mitigation Measures): LAX-AR-1, Conformance with LAWA's Archaeological Treatment Plan; LAX-AR-2, Archaeological Resources Construction Personnel Briefing; LAX-PR-1, Conformance with LAWA's Paleontological Management Treatment Plan; and LAX-PR-2, Paleontological Resources Construction Personnel Briefing. Impacts to archaeological and paleontological resources, and human remains would be less than significant.

1.4.1.5 Greenhouse Gas Emissions

Section 4.5, *Greenhouse Gas (GHG) Emissions*, presents an analysis examining GHG and global climate change (GCC) impacts that would result from construction and operational activities associated with the proposed Project. In accordance with South Coast Air Quality Management District (SCAQMD) guidance, significance is evaluated for combined amortized construction and operational emissions. Emissions were evaluated against a "No Net Increase" thresholds, where any emissions greater than the Without Project scenarios would result in a significant impact. Under this threshold, impacts would be significant for the 2015 With Project Compared to 2015 Existing Conditions scenario. All other scenarios evaluated would be less than significant.

Implementation of the proposed Project would not conflict with policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the proposed Project in 2024 would not meet the numerical targets for GHG reductions in the future that are reflected in those plans. Although the proposed Project would result in reduced GHG emissions when compared to the Without Project, it would not, in and of itself, meet GHG reduction targets based on 1990 GHG emission levels. Thus, impacts related to plan consistency with targeted GHG reductions would be significant. Implementation of Mitigation Measures MM-GHG (LAMP)-1, Incorporate Solar Energy into LAX Landside Access Modernization Program Facilities, and MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, Construction-Related Air Quality Control Measures, LAX-AQ-2, Transportation-Related Air Quality Control Measures, and LAX-AQ-3, Operations-Related Air Quality Control Measures, would reduce impacts of GHG emissions, but impacts would remain significant and unavoidable.

1.4.1.6 Hazards and Hazardous Materials

1.4.1.6.1 Unauthorized and Uncontrolled Release of a Hazardous Material

The proposed Project would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. The demolition of buildings would have the potential to result in the exposure of asbestos-containing materials (ACMs) or lead-based paint (LBP). Excavation activities would also have the potential to encounter contaminated soils or groundwater from the known hazardous materials sites in the Project area. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. Impacts would be less than significant.

1.4.1.6.2 Exposure of Workers to Hazardous Materials

The proposed Project would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. As such, excavation activities may result in previously unidentified soil and/or perched groundwater contamination to be encountered construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize exposure of construction workers to contaminated materials. Compliance with these requirements would ensure that contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. Impacts would be less than significant.

1.4.1.6.3 Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

The proposed Project would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. The proposed Project may require acquisition of the existing Stella Middle Charter and Bright Star Secondary Charter Academies on the Manchester Square site, should the school site not be acquired as part of the existing LAWA Aircraft Noise Mitigation Program (ANMP). The acquisition and relocation of these schools would occur prior to commencement of most construction activities. However, some limited construction related to the APM columns may occur prior to relocation of schools; this construction would be located approximately 300 feet north of the school property and would not impact school operations, nor would it involve acutely hazardous materials. No other schools are located or proposed within one-quarter mile of the Project site. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within one-quarter mile of an existing or proposed school. Impacts would be less than significant.

1.4.1.6.4 Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

The proposed Project would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of the Project components. However, construction of the various Project components may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. Mitigation would be implemented to ensure hazardous materials are properly disposed and to minimize interference with existing remediation efforts. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of Standard Control Measures (Mitigation Measures) LAX-HM-1, Ensure Continued Implementation of Existing Remediation Efforts Affected by Onsite Construction, and LAX-HM-2, Ensure Continued Implementation of Existing Remediation Efforts on Parcels Subject to Acquisition. Impacts would be less than significant.

1.4.1.6.5 Interference with Emergency Response or Emergency Evacuation Plans

The proposed Project would introduce new uses and activities and would alter ground access across the Project site. Traffic congestion associated with construction activities could impede the movement of emergency vehicles. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of Mitigation Measures MM-ST (LAMP)-1, Construction Traffic Project Task Force; MM-ST (LAMP)-2, Maintenance of Traffic; MM-ST (LAMP)-3, Worksite Traffic Control Plans; MM-ST (LAMP)-4, Roadway Closure Restrictions; and MM-ST (LAMP)-5, Traffic Maintenance During Construction, would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant impact with incorporation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5. Impacts would be less than significant.

1.4.1.7 Hydrology, Water Quality, and Groundwater

The proposed Project would require construction of new storm-drain systems, including retention basins used to retain the 10-year design storm. Additionally, construction activities would involve temporary surface water runoff and water quality impacts that would be considered to be potentially significant. The proposed Project would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site. Incorporation of Mitigation Measures MM-HWA (LAMP)-1, Stormwater Management Facilities (Project-Specific), MM-HWA (LAMP)-2, Stormwater Drainage Facilities (Project-Specific), and MM-HWA (LAMP)-3, Stormwater Management Facilities (Programmatic), would minimize surface water runoff and reduce degradation of surface water runoff and water quality. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact with incorporation of MM-HWA (LAMP)-1, MM-HWA (LAMP)-2, and MM-HWA (LAMP)-3. Impacts would be less than significant.

1.4.1.8 Land Use and Planning

The proposed Project would involve a number of land use plan amendments, including amendments to the General Plan (specifically amendments to the LAX Plan, the Westchester–Playa del Rey Community Plan, and Mobility Plan 2035) and, relative to zoning, the LAX Specific Plan. Additionally, a zone change separate from, but related to, those associated with the LAX Specific Plan would occur, as well as an amendment to the LAX Airport Layout Plan. Proposed Project components and policy amendments were analyzed for consistency with goals of the aforementioned land use plans. Based on the analysis conducted in Section 4.8, *Land Use and Planning*, the Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be less than significant. As such, no mitigation measures are required and impacts are less than significant.

1.4.1.9 Noise

1.4.1.9.1 Road Traffic Noise

Long-term operational noise generated by traffic associated with the proposed Project was analyzed in Section 4.9.2, *Road Traffic Noise*. The analysis included identifying noise-sensitive receptor locations that could be affected by Project-related changes in traffic conditions; calculating road traffic noise levels at those receptors; and assessing the Project-related change in noise levels. Incremental Project-related noise impacts at identified sensitive receptors would not exceed the 3 dB(A) CNEL threshold; therefore, road traffic noise impacts would be less than significant. As such, no mitigation measures are required and impacts are less than significant.

1.4.1.9.2 Construction Traffic and Equipment Noise and Vibration

The proposed Project would result in a temporary increase in noise and vibration during construction activities from construction traffic and construction equipment. Noise and vibration impacts were assessed based on the construction schedule, laydown areas, and proximity to sensitive receptors. Construction of the CONRAC would occur in close proximity to sensitive receptors and noise impacts from construction equipment would be significant. However, as discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, incorporation of Mitigation Measure MM-N (LAMP)-1, Noise Curtains, and Standard Control Measure

(Mitigation Measure), LAX-N-1, Construction-Related Noise Control, construction-related noise impacts would be reduced to a level that is less than significant.

1.4.1.9.3 Transit Noise and Vibration

Operations of the APM transit system proposed as part of the Project would result in a slight increase to transit noise and vibration. However, incremental transit-related noise impacts at identified sensitive receptors would not exceed the 3 dB(A) CNEL threshold; therefore, transit noise impacts would be less than significant. Based on the type of APM system assumed, transit-related ground-borne vibration would be less than significant because maximum vibration levels would be less than 72 VdB. As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact with respect to transit noise and vibration and no mitigation measures are required.

1.4.1.10 Population and Housing

Construction and operation of the proposed Project does not include any permanent or temporary residential structures that would induce population growth directly through the construction of housing. Although the proposed Project does not include any residential development, there exists the potential for indirect population growth as a result of the proposed roadway and utility improvements or employment generated to operate the proposed components. Additionally, a nominal number of dwelling units and residents would need to be displaced to enable construction of the proposed Project components. However, this relocation would not displace a substantial number of dwelling units or population that would necessitate the construction of replacement housing elsewhere. Therefore, as discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact and no Mitigation Measures are required.

1.4.1.11 Public Services

1.4.1.11.1 Fire Protection

Construction of the proposed Project would alter ground access throughout the Project site. Traffic congestion associated with construction of the proposed Project could delay the LAFD's emergency response activities by impeding the movement of emergency vehicles. Through the implementation of Mitigation Measure MM-ST (LAMP)-1, Construction Traffic Project Task Force, MM-ST (LAMP)-2, Maintenance of Traffic; MM-ST (LAMP)-3, Worksite Traffic Control Plans; MM-ST (LAMP)-4, Roadway Closure Restrictions; and MM-ST (LAMP)-5, Traffic Maintenance during Construction, LAWA would coordinate with the LAFD regarding emergency access and other design needs to ensure that fire protection service levels are maintained during construction.

The proposed Project would also result in an increase of uses that would generate a demand for fire protection services by passengers and employees. Operation of the CONRAC would result in an increased volume of the use and storage of hazardous materials on the Project site. The proposed Project would also place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area, compared to existing conditions. However, the handling and storage of hazardous materials for the proposed

Project would comply with applicable federal, state, and local regulations to ensure spills and releases would not create a hazard to the public or the environment, thus reducing demand on LAFD Fire Station 95. The proposed Project would not result in a substantial increase in on-airport population or land use changes that would require the need for new or expanded facilities, changes to fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities.

With implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5, the proposed Project's significant impacts on fire protection and emergency services would be reduced to a level that is less than significant, and less than cumulatively considerable. These measures would facilitate coordination with LAFD and specify the preparation of a construction traffic management plan to ensure the availability of emergency access during all construction phases. As discussed in Section 4.11.1, *Fire Protection*, the proposed Project would have a less than significant impact with respect to fire protection.

1.4.1.11.2 Law Enforcement

Construction of the proposed Project would alter ground access within the Project site. Traffic congestion associated with construction of the proposed Project could delay the ability for LAWAPD to provide adequate emergency response. LAWAPD's average response times in and around the Project site may increase as a result of the response distance and traffic conditions. Roadway closures would also have the potential to result in increased response times for law enforcement. However, through the implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5, LAWA would coordinate with LAWAPD regarding emergency access and other design needs to ensure that there is adequate emergency access throughout the Project site during construction.

The proposed Project would result in an increase of uses that would generate a demand for police protection services by passengers and employees. The proposed Project could include the placement of a satellite LAWAPD facility office within proximity to the CONRAC or ITF East to maintain adequate response times across the Project site, if needed. As such, the proposed Project would not result in a substantial increase in on-airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. The proposed Project would also incorporate various planned security features to reduce increased demand on LAWAPD, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant impact with incorporation of mitigation measures.

1.4.1.11.3 Schools

The proposed Project would involve development on the 135-acre site currently known as Manchester Square. Implementation of the proposed Project may include the acquisition of the site that currently contains the existing Stella Middle Charter and Bright Star Secondary Charter Academies, both located at 5431 W. 98th Street within Manchester Square, should the school site not be acquired as part of the existing LAWA Aircraft Noise Mitigation Program (ANMP). The relocation of these schools has been identified as part of LAWA's ongoing ANMP; no other public school facilities are located on parcels that would be impacted by construction of the proposed Project. Construction and operation of Stella Middle Charter and Bright Star Secondary Charter Academies at new sites could cause significant impacts. While the relocation of these school facilities would be evaluated in any required LAUSD CEQA documents, this would be an indirect impact caused by the proposed Project. As such, construction of the proposed Project could result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools. Impacts to these schools would be significant. However, LAWA would implement mitigation measure LAX-PS (LAMP)-1, School Relocations, to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party.

The operation of the proposed Project would not have any effect on existing public school facilities. The Project would not induce significant shifts in population or change the school age population in the area. Therefore, operation of the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, the need for new or physically altered school facilities in order to maintain acceptable service ratios or other performance objectives for schools. Operational impacts to public schools would be less than significant.

1.4.1.12 Transportation / Traffic

1.4.1.12.1 On-Airport Traffic

The proposed Project was analyzed for its impacts on key intersections and roadway links in the CTA. As discussed in Section 4.12.1, *On-Airport Transportation*, implementation of the proposed Project would not cause significant on-Airport traffic-related impacts to the intersections during either the arrivals or departures level peak hours. The proposed Project would reduce the volume of traffic in the CTA by eliminating commercial vehicles and rental car shuttles, and in general, show an improved level of service. As such, the proposed Project would have a less than significant impact and no mitigation measures are required.

1.4.1.12.2 Off-Airport Traffic

The off-airport traffic analysis conducted for the proposed Project analyzed 183 intersections located within eight jurisdictions, as well as 14 Congestion Management Program (CMP) arterial monitoring stations and 23 freeway segments. Impacts to transit and bicycle facilities were also analyzed. A summary of impacts by analysis years is shown in **Table 1-2**. As discussed in Section 4.12.2, *Off-Airport Transportation*, potential intersection improvements were identified for all of the intersections that would be impacted by the proposed Project. In some cases, it was determined that the improvements would not be feasible due to right-of-way issues, physical constraints, other planned improvements, or motorist safety concerns. In other cases, the recommended improvements would only partially mitigate the impact. The final mitigation measures resulting from this analysis are identified in Section 4.12.2.7. Incorporating mitigation, the proposed Project would result in significant and unavoidable impacts to one intersection (La Cienega Boulevard and Arbor Vitae Street) and one freeway segment (I-405 at La Cienega Boulevard) for Future 2035 conditions.

Table 1-2: Off-Airport Transportation Impact Summary

	BASELINE (2015) COMPARED TO 2015 WITH PROJECT	2024 FUTURE WITHOUT PROJECT COMPARED TO 2024 FUTURE WITH PROJECT	2035 FUTURE WITHOUT PROJECT COMPARED TO 2035 FUTURE WITH PROJECT
Intersection Analysis			
Without Mitigation	Significant Impact (3)	Significant Impact (6)	Significant Impact (8)
With Mitigation Incorporated	Less than Significant	Less than Significant	Significant Impact (1)
CMP Analysis			
Without Mitigation	Less than Significant	Less than Significant	Less than Significant
With Mitigation Incorporated	N/A	N/A	N/A
Freeway Analysis			
Without Mitigation	Less than Significant	Less than Significant	Significant Impact (1)
With Mitigation Incorporated	N/A	N/A	Significant Impact (1)
Parking Analysis	Less than Significant	Less than Significant	Less than Significant
Transit Analysis	Less than Significant	Less than Significant	Less than Significant
Bicycle and Pedestrian Analysis	Less than Significant	Less than Significant	Less than Significant

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo & Associates, Inc., September 2016.

1.4.1.12.3 Construction Traffic

The traffic analysis conducted determined impacts for both the peak construction period for the proposed Project (January 2020) and the peak cumulative condition (November 2019). Twenty-nine intersections in the vicinity of LAX were analyzed, including those roads and intersections that would most likely be used by employee and truck traffic associated with construction of the proposed Project. As discussed in Section 4.12.3, *Construction Surface Transportation*, one significant impact would occur during January 2020 under the proposed Project; three intersections would have significant cumulative impacts. However, through the implementation of Mitigation Measures MM-ST (LAMP)-1, Construction Traffic Project Task Force; MM-ST (LAMP)-2, Maintenance of Traffic; MM-ST (LAMP)-3, Worksite Traffic Control Plans; MM-ST (LAMP)-4, Roadway Closure Restrictions; and MM-ST (LAMP)-5, Traffic Maintenance during Construction, impacts would be reduced to a less than significant level. Therefore, construction traffic impacts would be less than significant.

Section 4.12.3 also evaluated temporary traffic, access, and transit impacts during construction. Construction activities and related construction vehicle trips associated with the proposed Project would impact on-Airport and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, on-Airport and off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; however, alternate routes would be provided. It is anticipated that construction of the proposed Project would result in the loss of regular vehicular or pedestrian access to some Airport facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Airport. Impacts to traffic during construction would be significant.

To minimize the impact on traffic during construction activities, LAWA would implement Mitigation Measures MM-ST (LAMP)-1, Construction Traffic Project Force; MM-ST (LAMP)-2, Maintenance of Traffic; MM-ST (LAMP)-3, Worksite Traffic Control Plans; MM-ST (LAMP)-4, Roadway Closure Restrictions; and MM-ST (LAMP)-5, Traffic Maintenance During Construction. With implementation of these mitigation measures, significant impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route would be reduced, but not to a level that would be less than significant. Thus, impacts would be significant and unavoidable.

1.4.1.13 Utilities and Service Systems

1.4.1.13.1 Energy

Section 4.13.2, *Energy*, addresses the infrastructure capacity and demand associated with the energy consumption of the proposed Project, potential conflicts between the proposed Project and existing energy infrastructure resulting in environmental impacts, and energy conservation and measures included in the proposed Project to reduce wasteful, inefficient, and unnecessary consumption of energy.

Construction of the proposed Project would consume energy in the form of electricity, natural gas and transportation-related fuels, through use of construction equipment, transport of construction materials, temporary lighting, etc. However, construction energy consumption would be short-term and relatively minor compared to long-term regional energy use. Similarly, energy requirements for construction of the proposed

Project represent a small fraction of the existing capacity of the electrical and fuel systems. As such, impacts on fuel supply would be less than significant, and energy demand for construction would not require new facilities, infrastructure, or capacity-enhancing alterations to existing facilities. Construction of the proposed Project would also require relocation of utility infrastructure throughout the Project area. However, implementation of the proposed Project would not substantially interfere with major electricity or natural gas utility facilities that would result in significant direct or indirect impacts not already addressed as part of the proposed Project. Impacts would be less than significant.

The Project components would utilize electrical energy for a wide range of functions. As discussed in Section 4.13.2, *Energy*, electrical consumption estimates for the proposed Project represents approximately 0.3 percent of the electrical demand LADWP forecasts for the LA region in 2035. Thus, project-related electricity demand would not exceed electrical supply and distribution capabilities and impacts would be less than significant. The low usage of natural gas and transportation-related fuels would also represent a small portion of the estimated available natural gas, gasoline, and diesel supply. On-site fueling facilities would be located at the CONRAC to service various rental car companies; however these fueling activities currently occur at rental car facilities in the Project area. Thus, the proposed Project would have a less than significant impact on fuel supply and distribution capabilities.

Impacts related to energy use would be less than significant; therefore, no mitigation measures are required. However, LAWA would implement Standard Control Measures (Mitigation Measures) LAX-AQ-1, Construction-Related Air Quality Control Measures, to reduce energy usage.

1.4.1.13.2 Water

The water analysis presented in Section 4.13.3, *Water*, addresses water consumption associated with the proposed Project as well as sanitary wastewater generated by the proposed Project. Implementation of the proposed Project would include water consumption for various construction-related purposes such as concrete production, equipment cleaning, certain activities such as pavement saw-cutting, and dust control. However, the construction-related water demand of the Project would not exceed regional water supply. Therefore, other than new connections at the point of contact, no new distribution infrastructure would be required. As such, construction of the proposed Project would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities. Construction of the proposed Project would require relocation of utility infrastructure throughout the Project area. However, implementation of the proposed Project would not substantially interfere with major electricity or natural gas utility facilities that would result in significant direct or indirect impacts not already addressed as part of the proposed Project. Impacts would be less than significant and no mitigation measures are required.

The proposed Project would generate a demand for water due to potable water use in restroom and food service facilities; car and train washing operations; fire water systems; and landscaping. However, as discussed in Section 4.13.3, *Water*, the proposed Project would not cause an exceedance of water supply and distribution capabilities nor require new supply or distribution facilities to be built. Existing mains, trunk lines and services lines provide service throughout the Project area. Other than new connections at the point of contact, no new distribution infrastructure would be required. As such, the proposed Project would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities. Impacts on water supply would be less than significant. Additionally, sewage requirements of the proposed Project would have a less than significant impact on the existing sewage facilities and no mitigation measures are required.

1.4.2 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM POTENTIAL FUTURE RELATED DEVELOPMENT

After construction of the proposed Project, parcels that were needed for construction laydown, staging and/or temporary relocation areas may be subject to potential future development, as illustrated in Figure 1-2. While there are no specific plans for development of these parcels at this time, if and when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. A program-level of analysis of these parcels was conducted in this EIR. **Table 1-3** presents a summary of findings for each of the resources analyzed in this EIR for potential future related development of the proposed Project. A summary of impacts for each resource category is presented below. Detailed analysis is included in Chapter 4, *Environmental Impact Analysis*.

Table 1-3 (1 of 2): Significant Impacts of the Potential Future Related Development

RESOURCE CATEGORY	PROPOSED PROGRAM (BEFORE MITIGATION)	PROPOSED MITIGATION?	PROPOSED PROGRAM (AFTER MITIGATION)
Aesthetics			
Visual Character	Less than Significant	No	Less than Significant
Shading	Less than Significant	No	Less than Significant
Light and Glare	Less than Significant	No	Less than Significant
Air Quality			
Construction	Significant (NO_x)	Yes	Less than Significant
Operations	Significant (VOC, NO_x, and PM_{10}))	Yes	Significant (VOC, NOx, and PM_{10})
Human Health			
Construction	Significant (Cancer risks)	Yes	Less than Significant
Operations	Less than Significant	Yes	Less than Significant
Biological Resources			
Construction	Less than Significant	No	Less than Significant
Operations	Less than Significant	No	Less than Significant
Cultural Resources			
Historic Resources	Less than Significant	No	Less than Significant
Archaeological Resources	Potentially Significant	Yes	Less than Significant
Paleontological Resources	Potentially Significant	Yes	Less than Significant
Human Remains	Less than Significant	No	Less than Significant

[Draft]

Table 1-3 (2 of 2): Significant Impacts of the Potential Future Related Development

RESOURCE CATEGORY	PROPOSED PROGRAM (BEFORE MITIGATION)	PROPOSED MITIGATION?	PROPOSED PROGRAM (AFTER MITIGATION)
Greenhouse Gas Emissions			
Per Capita Efficiency Threshold (quantifiable)	Significant	No	Significant and Unavoidable
Plan/Policy Consistency	Significant	Yes	Significant and Unavoidable
Hazards and Hazardous Materials			
Unauthorized and Uncontrolled Release	Less than Significant	No	Less than Significant
Exposure of Workers	Less than Significant	No	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	No	Less than Significant
Interfere with Ongoing Remediation	Significant	Yes	Less than Significant
Interfere with Emergency Response or Emergency Evacuation Plan	Less than Significant	No	Less than Significant
Hydrology, Water Quality, and Groundwater			
Hydrology	Significant	Yes	Less than Significant
Water Quality	Less than Significant	No	Less than Significant
Groundwater	Less than Significant	No	Less than Significant
Land Use and Planning	Less than Significant	No	Less than Significant
Noise			
Road Traffic Noise	Less than Significant	No	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Significant	Yes	Less than Significant
Transit Noise and Vibration	Less than Significant	Yes	Less than Significant
Population and Housing	Less than Significant	No	Less than Significant
Public Services			
Fire Protection	Less than Significant	No	Less than Significant
Law Enforcement	Less than Significant	No	Less than Significant
Schools	Less than Significant	No	Less than Significant
Transportation/ Traffic			
On-Airport Traffic	Less than Significant	No	Less than Significant
Off-Airport Traffic	Significant	Yes	2035 - Significant and Unavoidable
Construction Traffic	Significant	Yes	Significant and Unavoidable
Utilities and Service Systems and Energy			
Energy	Less than Significant	No	Less than Significant
Water	Less than Significant	No	Less than Significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

1.4.2.1 Aesthetics

1.4.2.1.1 Visual Character

Construction and operation of the potential future related development would be consistent with the visual character of the Project site. Any potential future related development would comply with FAA height restrictions and would not interfere with Airport operations. Development would also adhere to the architectural and landscaping standards established within the LAX Design Guidelines and the Century Boulevard Streetscape Plan to ensure consistency with the surrounding visual character. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to visual character. Impacts would be less than significant.

1.4.2.1.2 Shading

Construction and operation of the potential future related development would adhere to guidance contained in the LAX Design Guidelines, including building heights, setbacks, and buffers. Therefore, the potential future related development would result in similar shading impacts on shade-sensitive uses as the proposed Project, which would be consistent with the existing character of the highly developed area. As discussed in Section 4.1, *Aesthetics*, potential future related development would have a less than significant impact with respect to shading.

1.4.2.1.3 Light and Glare

The potential future related development would not result in light and glare impacts related to (1) a change in lighting or lighting intensity such that light would spill off the Project site and affect light-sensitive areas; or (2) a substantial new source of glare, or a change in the built environment, which would adversely affect day or nighttime views in adjacent areas sensitive to glare. Impacts would be less than significant.

1.4.2.2 Air Quality and Human Health

1.4.2.2.1 Air Quality

Section 4.2, *Air Quality and Human Health Risk*, examines air quality emissions that would result from construction and operations associated with the potential future related development. Prior to mitigation, the potential future related development would result in the following significant impacts:

- Construction-related regional emissions of NO_X.
- Operations-related local concentrations of PM_{10}.
- Operations-related regional emissions of VOC, and NO_X.

However, through implementation of Mitigation Measure MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, General Air Quality Control Measures, LAX-AQ-2, Construction-Related GHG Reduction Measures, and LAX-AQ-3, Transportation-Related GHG Reduction Measures, significant impacts would be reduced. However, remaining significant and unavoidable impacts are as follows:

- Operations-related regional emissions of VOC, NO_X, and PM_{10}.
- Based on the regional emissions analysis, the potential future related development would exceed operations-related local concentrations thresholds for several pollutants.

  Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related impacts summarized above.

1.4.2.2.2 Human Health

Section 4.2, *Air Quality and Human Health Risk*, also includes a Human Health Risk Assessment (HHRA) and health impact analysis to assess incremental changes to health impacts for people exposed to toxic air contaminants (TAC) resulting from construction and operations associated with the proposed Project. The HHRA and health impact analysis disclose whether the potential future related development would increase health risks for people living, working, recreating, or attending school near LAX. Prior to mitigation, the potential future related development would result in the following significant impacts:

- Incremental cancer risks associated with unmitigated construction of the proposed Project (including the potential future related development) would be above the threshold of significance of 10 in one million for child resident, school child, and adult resident. Incremental cancer risk impacts from construction would be significant.

However, through implementation of Mitigation Measure MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, General Air Quality Control Measures, LAX-AQ-2, Construction-Related GHG Reduction Measures, and LAX-AQ-3, Transportation-Related GHG Reduction Measures, plus a commitment to 40 percent of the off-road construction equipment used on the Project meeting Tier 4 Final standards, 40 percent meeting Tier 4 Interim Standards, and the remaining 20 percent meeting Tier 3 standards – with 50 percent of Tier 3 compliant equipment installed with Level 3 VDECS particulate filters, significant impacts would be reduced to less than significant.

1.4.2.3 Biological Resources

The potential future related development includes development of approximately 89 acres of property with compatible and supportive uses adjacent to the proposed Project facilities. While specific development proposals have not been identified, the potential future related development areas are currently either developed or highly disturbed, and well removed from sensitive biological resources, with the exception of ornamental vegetation in developed areas that may support nesting birds/raptors. No wildlife movement/migration corridors are associated with any portion of the potential future related development areas. While these areas currently contain mature trees, as well as other ornamental vegetation, that could harbor raptor and other native bird and nests, this vegetation would be removed during Phase 1 of the proposed Project as these areas would be used for construction staging and laydown. Thus, impacts to nesting birds/raptors would be less than significant.

The operations of the potential future related development would introduce different land uses; however, these uses would not create a significant change in habitat value or nesting sites. The potential future related development would involve the construction of new buildings, some of which would have windows that could pose obstacles to migratory birds. However, as there are no native or nonnative vegetated corridors in the proximity of the proposed Project, the potential impact of these structures on migratory birds is anticipated to be minimal. Additionally, lighting of these structures would be consistent with the lighting already in place in these areas and would be directed downward, minimizing the potential for these facilities to attract or disorient nocturnal migrating birds. The potential future related development would not diminish the chances for long-term survival of bird species or their habitats. Operations of the potential future related development would require landscaping maintenance activities; however, additional tree and/or ornamental vegetation removal programs are not planned, and as such, no significant impacts to nesting birds/raptors would occur from the operation of the potential future related development.

1.4.2.4 Cultural Resources

A reconnaissance survey of the Project area, including the locations of potential future related development, did not reveal any buildings, structures, objects, or sites within areas of potential future development that appear eligible for listing as historic resources. Because no historic resources are located in or immediately adjacent to areas identified for potential future related development, this development would not result in significant impacts to historic resources. Impacts to historical resources would be less than significant.

As discussed in Section 4.4, *Cultural Resources*, the potential future related development would have a less than significant impact on archaeological and paleontological resources, and human remains, with the incorporation of Standard Control Measures (Mitigation Measures): LAX-AR-1, Conformance with LAWA's Archaeological Treatment Plan; LAX-AR-2, Archaeological Resources Construction Personnel Briefing; LAX-PR-1, Conformance with LAWA's Paleontological Management Treatment Plan; and LAX-PR-2, Paleontological Resources Construction Personnel Briefing. Impacts to archaeological and paleontological resources, and human remains would be less than significant.

1.4.2.5 Greenhouse Gas Emissions

Section 4.5, *Greenhouse Gas (GHG) Emissions*, presents an analysis examining GHG and global climate change (GCC) impacts that would result from construction and operational activities associated with the potential future related development. In accordance with SCAQMD guidance, significance is evaluated for combined amortized construction and operational emissions. Emissions for the potential future related development were based on whether such mixed-use development would exceed the SCAQMD's efficiency threshold of 3.0 $MTCO_2e$ per year per service population (i.e., per employee). The operational GHG emissions associated with potential future related development in 2035 is estimated to be 19,762 $MTCO_2e$ per year, which when added to the 561 $MTCO_2e$ per year of amortized construction emissions would total 20,323 $MTCO_2e$ per year. That total divided by 1,902 employees equals 10.7 $MTCO_2e$ per year per employee in 2035, which exceeds the efficiency threshold of 3.0 $MTCO_2e$ per year per service population (i.e., per employee). As such, the GHG emissions impact associated with potential future related development would be significant.

Implementation of the potential future related development would not conflict with policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the proposed Project including potential future related development in 2035 would not meet the numerical targets for GHG reductions in the future that are reflected in those plans. Although the proposed Project including potential future related development would result in reduced GHG emissions when compared to the Without Project, it would not, in and of itself, meet GHG reduction targets based on 1990 GHG emission levels. Thus, impacts related to plan consistency with targeted GHG reductions would be significant. Implementation of Mitigation Measures MM-GHG (LAMP)-1, Incorporate Solar Energy into LAX Landside Access Modernization Program Facilities, and MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, and Standard Control Measures (Mitigation Measures) LAX-AQ-1, Construction-Related Air Quality Control Measures, LAX-AQ-2, Transportation-Related Air Quality Control Measures, and LAX-AQ-3, Operations-Related Air Quality Control, would reduce impacts of GHG emissions, but impacts would remain significant and unavoidable.

1.4.2.6 Hazards and Hazardous Materials

1.4.2.6.1 Unauthorized and Uncontrolled Release of a Hazardous Material

The potential future related development could include activities or subterranean elements that could result in the accidental release of hazardous materials, including contaminated soil, groundwater, or other hazardous materials. However, there would be no remaining buildings on these parcels that could potentially release ACMs or LBP during demolition activities. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material.

1.4.2.6.2 Exposure of Workers to Hazardous Materials

Excavation activities for the potential future related development may result in previously unidentified soil and/or perched groundwater contamination that could be encountered during construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that any contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials.

1.4.2.6.3 Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Construction of the potential future related development would involve activities that would temporarily increase the amount of hazardous materials on the Project site. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Furthermore, it is not anticipated that any schools would be located or proposed within one-quarter mile of the areas of potential future related development by the time of development. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school.

1.4.2.6.4 Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

The potential future related development would result in the introduction of new structures at the Project site. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction activities. However, construction activities may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. Mitigation measures LAX-HM-1, Ensure Continued Implementation of Existing Remediation Efforts Affected by Onsite Construction, and LAX-HM-2, Ensure Continued Implementation of Existing Remediation Efforts on Parcels Subject to Acquisition, would be implemented to ensure hazardous materials are properly disposed and to minimize interference with existing remediation efforts. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with incorporation of LAX-HM-1 and LAX-HM-2.

1.4.2.6.5 Interference with Emergency Response or Emergency Evacuation Plans

The potential future related development would introduce new uses and activities at the Project site. However, as the development would be implemented after the completion of all roadway improvements, improved traffic flow would improve response times for emergency personnel and would not interfere with an adopted emergency response or emergency evacuation plan. As discussed in Section 4.6.2, *Safety Hazards*, potential future related development under the proposed Project would have a less than significant impact.

1.4.2.7 Hydrology, Water Quality, and Groundwater

As discussed in Section 4.7, *Hydrology, Water Quality and Groundwater*, development of additional land for potential future related development could create or contribute runoff water that could exceed the capacity of existing or planned stormwater drainage systems. As each parcel is proposed for development, the estimated volume of stormwater detention that would be required would need to be identified. Thus, the potential future related development could create or contribute runoff water which could exceed the capacity of existing or planned stormwater drainage systems and the impact would be significant. The potential future related development could alter and redirect stormwater flows; however, it is unlikely that the potential future related development would result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow. Stormwater discharges to existing drainage features would continue similar to existing conditions. Thus, potential future related development would not have a significant impact on the movement of surface water because it would not cause a substantial change in the current or direction of water flow. Development of additional land for potential future related development could create or contribute runoff water that could cause or exacerbate flooding. As each parcel is proposed for development, the estimated volume of stormwater detention that would be required would need to be identified. Thus, the potential future related development would cause an increase in runoff that would cause or exacerbate flooding with the potential to harm people or damage property and the impact would be significant. However, through implementation of Mitigation Measure MM-HWA (LAMP)-3, Stormwater Management Facilities (Programmatic), impacts on stormwater drainage and flooding would be less than significant.

Additionally, impacts to groundwater supply and recharge would be less than significant because the potential future related development would not cause substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.

1.4.2.8 Land Use and Planning

The potential future related development of parcels needed for construction lay-down, staging, and/or temporary relocation areas could occur after construction of the proposed Project. While there are no specific plans for development of these parcels at this time, the development of these parcels could accommodate up to 900,000 sq. ft. of commercial development. Land use designations and design guidelines have been developed to guide the future development of these parcels. The uses projected for these sites include office space, hotel, retail space, and conference center. Other possible amenities could include theaters, health and fitness centers, layover facilities, galleries or museums, or community uses.

When individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary, to determine potential impacts related to land use. This would include a review for consistency with applicable land use plans, including the ALUP, RTP/SCS, General Plan, and Westchester-Playa-del Rey Community Plan. Additionally, developers of all potential future related development would be required to comply with all Los Angeles Municipal Code requirements for allowable uses and development standards. The potential future related development would also comply with FAA height restrictions and would not interfere with Airport operations.

As part of the proposed amendments discussed in Section 4.8, *Land Use and Planning*, the parcels identified for potential future related development would be given a new subarea classification under the LAX Plan and LAX Specific Plan of Airport Landside Support Subarea. These areas that would be classified as Airport Landside Support Subarea include parcels that are currently within the LAX Plan boundaries in Airport Landside Subarea and the Belford Special Study area, and parcels within the Westchester-Playa del Rey Community Plan boundaries that are zoned C2, R3, and M2. The new subarea classification of Airport Landside Support Subarea would permit uses consistent with the City's C2 Commercial Zone, (although residential units would be prohibited). Based on the above, the potential future related development would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be less than significant.

1.4.2.9 Noise

1.4.2.9.1 Road Traffic Noise

Long-term operational noise generated by traffic associated with the potential future related development was analyzed in Section 4.9.2, *Road Traffic Noise*. The analysis includes identifying noise-sensitive receptor locations that could be affected by Project-related changes in traffic conditions; calculating road traffic noise levels at those receptors; and assessing the incremental change in noise levels. Program-related noise impacts at identified sensitive receptors would not exceed the 3 dB(A) CNEL threshold; and therefore, road traffic noise impacts would be less than significant. As such, no mitigation measures are required and impacts are less than significant.

1.4.2.9.2 Construction Traffic and Equipment Noise and Vibration

Similar to the proposed Project, construction of the potential future related development would include construction routes designated for freeways and major arterials, avoiding minor arterials and local streets. The total trip generation would be below the existing traffic volumes on the freeways and major arterial streets around the Airport. Construction-related traffic would not result in a doubling or tripling of existing traffic volumes on streets around the Airport. As such, impacts related to construction traffic noise of the potential future related development would be less than significant because noise increases would be less than 3 dB(A). As construction of the potential future related development may be located adjacent to existing hotels (i.e., the Manchester Square staging areas), the potential exists for construction to occur in close proximity to existing hotels and for construction noise to exceed significance thresholds. However, as discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, incorporation of Mitigation Measure MM-N (LAMP)-1, Noise Curtains, and Standard Control Measure (Mitigation Measure), LAX-N-1, Construction-Related Noise Control, construction-related noise impacts would be reduced to a level that is less than significant.

Construction vibration levels associated with various construction equipment for the potential future related development would not exceed Federal Transit Authority (FTA) thresholds; therefore, construction equipment vibration impacts would be less than significant.

1.4.2.9.3 Transit Noise and Vibration

Under the potential future related development, no additional transit noise or vibration would be generated. As discussed in Section 4.9.4, *Transit Noise and Vibration*, potential future related development under the proposed Project would have a less than significant impact.

1.4.2.10 Population and Housing

Similar to the proposed Project, the potential future related development would not include any residential uses, and therefore would not result in any direct population or housing growth. However, as discussed in Section 4.10, *Population and Housing*, there could be a potential increase in employees associated with the potential future related development that could result in indirect population growth in the area. Based on the analysis presented in Section 4.10, *Population and Housing*, employment generated by the potential future related development would be consistent with the projected employment growth for jurisdictions included in the Study Area. Therefore, the potential future related development would not indirectly induce population growth in the Study Area. Impacts would be less than significant.

Implementation of the potential future related development would not remove any residential uses on the Project site, and would therefore not result in the displacement of a substantial number of existing housing units or population that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.

1.4.2.11 Public Services

1.4.2.11.1 Fire Protection

The potential future related development would introduce new uses resulting from the development of these parcels that would increase the demands on LAFD services. As discussed in Section 4.11.1, *Fire Protection*, over time this could result in the need for additional staffing, equipment, or the expansion, consolidation, or relocation of an existing facility to maintain fire protection and emergency services. However, at this time, there are no specific plans for development of the proposed newly created parcels. As individual development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Developers of all potential future related development would be required to coordinate with the LAFD, incorporate fire safety features, and comply with fire and building code requirements. Through compliance with fire and building safety code requirements and incorporation of fire safety features, this impact is considered less than significant.

1.4.2.11.2 Law Enforcement

The potential future related development would introduce new uses resulting from the development of these parcels that could increase the number of incidents requiring law enforcement services. As discussed in Section 4.11.2, *Law Enforcement*, over time this could result in a need for additional staffing, equipment, or the expansion, consolidation, or relocation of an existing facility to maintain law enforcement services. However, at this time, there are no specific plans for development of the proposed newly created parcels. As individual development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Developers of all potential future related development would be required to coordinate with LAWAPD and incorporate planned security features to reduce the potential for increased demand on local law enforcement. Through incorporation of security features and coordination with LAWAPD, this impact is considered less than significant.

1.4.2.11.3 Schools

While residential uses are not proposed, the potential future related development would result in a generation of approximately 1,900 employees (see Section 4.10, *Population and Housing)*, thus increasing the number of employees within the Project area. Most of the new employees would likely be drawn from the Los Angeles regional area and would not require relocation of residency or development of new school facilities. All individual development projects would be required, as necessary, to pay mandatory developer fees to offset any increased demands on local schools. As such, potential impacts on existing school facilities resulting from potential future related development would be less than significant.

1.4.2.12 Transportation / Traffic

1.4.2.12.1 On-Airport Traffic

The potential future related development would have no effect on on-Airport traffic. As such, impacts to on-Airport traffic would be less than significant.

1.4.2.12.2 Off-Airport Traffic

The off-airport traffic analysis conducted for the potential future related development analyzed the same intersections, CMP arterial monitoring stations, and freeway segments as the proposed Project. As discussed in Section 4.12.2, *Off-Airport Transportation*, potential intersection improvements were identified for all of the intersections that would be impacted by the proposed Project. In some cases, it was determined that the improvements would not be feasible due to right-of-way issues, physical constraints, other planned improvements, or motorist safety concerns. In other cases, the recommended improvements would only partially mitigate the impact. The final mitigation measures resulting from this analysis are identified in Section 4.12.2.7. The 2035 Future With Project and Potential Future Related Development condition would result in ten intersections with significant impacts before mitigation, and one intersection (La Cienega Boulevard and Arbor Vitae Street) with a significant and unavoidable impact after mitigation, which would also be cumulatively considerable. Additionally, impacts to the following two northbound freeway segments would be significant and unavoidable: the I-405 at La Cienega Boulevard and the I-405 at La Tijera Boulevard.

1.4.2.12.3 Construction Traffic

Based on the construction employment schedules developed for the Project, including potential future related development, it is anticipated that construction employees required for Phase 2 components would be approximately 20 percent of the peak employment (approximately 200 employees) that is anticipated to occur in January 2020. Material hauling trucks would be required throughout construction of the Phase 2 components; however, the magnitude of daily trips would be significantly less than those anticipated during the Project peak. Similarly, the required employment and material hauling truck trips for the Phase 2 components are anticipated to be significantly less than those anticipated during the cumulative peak period (November 2019). Therefore, it is estimated that trips associated with 200 employees would not result in LOS impacts that would exceed the significance thresholds of affected jurisdictions. Thus, no significant off-Airport impacts would occur as a result of the construction traffic associated with the construction of the Phase 2 components or the potential future related development.

Section 4.12.3 also evaluated the temporary traffic, access, and transit impacts during construction. Construction activities and related construction vehicle trips associated with the potential future related development would impact off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. It is anticipated that construction of the potential future related development would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Impacts to traffic during construction would be significant.

To minimize the impact on traffic during construction activities, LAWA would implement Mitigation Measures MM-ST (LAMP)-1, Construction Traffic Project Force; MM-ST (LAMP)-2, Maintenance of Traffic; MM-ST (LAMP)-3, Worksite Traffic Control Plans; MM-ST (LAMP)-4, Roadway Closure Restrictions; and MM-ST (LAMP)-5, Traffic Maintenance During Construction. With implementation of these mitigation measures, significant impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route would be reduced, but not to a level that would be less than significant. Thus, impacts would be significant and unavoidable.

1.4.2.13 Utilities and Service Systems

1.4.2.13.1 Energy

Construction of the potential future related development would consume energy in the form of electricity, natural gas and transportation-related fuels, through use of construction equipment, transport of construction materials, temporary lighting, etc. However, construction energy consumption would be short-term and relatively minor compared to long-term regional energy use. Similarly, energy requirements for construction of the potential future related development represents a small fraction of the existing capacity of the electrical and fuel systems. As such, impacts on fuel supply would be less than significant, and energy demand for construction would not require new facilities, infrastructure, or capacity-enhancing alterations to existing facilities. Additionally, existing utilities would be protected during construction of the proposed Project. Therefore, the future development of the Airport Landside Support Subarea as described in the proposed amendment to the LAX Specific Plan is not expected to interfere with major utility facilities. At such time as specific development plans are proposed, they would be evaluated in more detail. Impacts would be less than significant.

The future development of the Airport Landside Support Subarea as described in the proposed amendment to the LAX Specific Plan would generate new energy demands. The uses projected for these sites include office space, hotel, retail space, and conference center. When combined with the estimated power demand of the Project components, demand is still within LADWP's excess capacity. This estimate is conservative as the factors used represent historical usage data by existing buildings and do not reflect new development subject to current and future energy efficiency standards. Any proposed development would comply with the LAGBC and the LAX Design Guidelines to be adopted as part of the Project, which would reduce energy use below the estimated amount. Impacts would be less than significant.

1.4.2.13.2 Water

The water analysis presented in Section 4.13.3, *Water*, addresses water consumption associated with the potential future related development as well as sanitary wastewater generated. While there are no specific plans for development of these parcels at this time, the development of these parcels could accommodate up to 900,000 square feet of commercial development; therefore, water demand assumptions were based on this assumed use. On May 3, 2016, the Board of Water and Power Commissioners adopted a WSA that concluded that (1) the proposed Project (including the potential future related development) is consistent with the forecasts of SCAG and the UWMP; and (2) LADWP has sufficient supply to meet the projected demand of the proposed Project (including the potential future related development). As such, the potential future related development would not cause an exceedance of water supply and distribution capabilities nor require new supply or distribution facilities to be built. Impacts on water supply would be less than significant.

As discussed above, water demand of the potential future related development would not exceed regional water supply. Therefore, other than new connections at the point of contact, no new distribution infrastructure would be required. As such, construction of the potential future related development would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities. Impacts would be less than significant.

1.5 Environmentally Superior Alternative

Section 15126.6(e)(2) of the State *CEQA Guidelines* requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the "no project" alternative, the EIR must identify an environmentally superior alternative among the other alternatives. As further described in Chapter 5, *Alternatives*, the alternatives to the proposed Project include:

Alternative 1 - No Project: Under the "No Project" alternative, none of the improvements and activities proposed for the LAX Landside Access Modernization Program would occur and the proposed plan amendments included in the Project (see Section 2.8) would not be implemented. The proposed Project areas would continue to be used for airport parking, existing roadways, existing private development, and other various uses at the site. Private parking operators would likely expand operations in order to capitalize on the expected growth in air passengers at LAX that would occur irrespective of the proposed Project. Rental car facilities would also expand based on the projected passenger growth, which would be the same as under the proposed Project. Descriptions of reasonably foreseeable LAX development in 2024 and 2035 under the No Project Alternative include airfield, terminal, and landside improvements. These improvements would reasonably be expected to occur in the foreseeable future if the proposed Project were not approved, based on current plans. (See State CEQA Guidelines Section 15126.6(e)(3)(C).)

Alternative 2 – No APM Alternative: The No APM Alternative proposes the construction of all Project components with the exception of the APM system, including the guideway, stations, pedestrian walkways, and APM Maintenance and Storage Facility (MSF). Additionally, this alternative would not provide for a direct connection with the proposed Metro AMC 96th Street Transit Station. All other project components would be included. This alternative is proposed because it would avoid the adverse impacts of APM construction and operation.

Alternative 3 – Reduced Phase 1 Improvements Alternative: Alternative 3, the Reduced Phase 1 Roadway Improvements Alternative, includes all of the improvements and activities proposed for the LAX Landside Access Modernization Program. However, all roadway improvements that are not immediately essential for servicing Phase 1 facilities would be implemented during Phase 2 of project construction. This alternative is proposed because it would delay construction impacts of Phase 1 roadways to Phase 2, thereby reducing construction impacts related to air quality, greenhouse gas emissions, noise, and traffic. Under this alternative, the ITF East and the east garage of the ITF West would be completed in Phase 2 of the Project.

Alternative 4 – One ITF Parking Structure Alternative: Under Alternative 4, the parking structure at the ITF East site would not be constructed, which would reduce construction and operational impacts of this Project component. The area originally intended for the ITF East public parking garage would be a surface parking lot with approximately 1,400 parking spaces, 6,900 fewer than the 8,300 parking spaces provided by the ITF East public parking structure proposed as part of the Project. Even though 8,000 parking spaces would be provided at the ITF West public parking garage, Alternative 4 would still result in an increase in off-Airport parking needs, and as such, private companies would continue to develop land for private, remote public parking facilities.

Alternative 5 – Increased Transportation Demand Management Alternative: Alternative 5 assumes a greater participation in the Travel Demand Management (TDM) program, approximately 20 percent of employees. The 20 percent TDM program focuses on expanding from the 5 percent TDM Program focus on LAX-site employees only (see Section 4.12.2.9.1) to the greater LAX-Gateway Area employee base. The projected LAX-area employees – based upon assumed LAX employee growth over the LAMP horizon years of 2024 and 2035 – are projected to increase to 56,300 employees by the 2024 horizon year, and to over 62,500 employees by the 2035 horizon year.

Alternative 6 – Reduced Future Related Development Alternative: The Reduced Potential Future Related Development Alternative, Alternative 6, includes all Project components; however, it provides for less dense potential future related development after completion of construction of the proposed Project in 2035. It is proposed because it would reduce the significant impacts of potential future related development.

Section 15126.6(e)(2) of the 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 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 Draft EIR, the range of potentially feasible alternatives includes the No Project Alternative; the No APM Alternative; the Reduced Phase 1 Improvements Alternative; the One ITF Parking Structure Alternative; the Increased Transportation Demand Management Program Alternative; and the Reduced Future Related Development Alternative. Impacts related to these alternatives for the proposed Project are shown in **Table 1-4**; impacts related to these alternatives for the proposed Program (potential future related development) are shown in **Table 1-5**.

As discussed above, and as depicted in Table 1-4, the No Project Alternative is considered to be the overall environmentally superior alternative as it would avoid all construction impacts of the proposed Project and is the only alternative that would not have a significant unavoidable impact with respect to construction-related regional VOC and NOx emissions, construction related local concentrations of PM_{10} emissions, and operations-related local concentrations of PM_{10} emissions. The No Project Alternative would also not have a significant unavoidable impact with respect to visual character and historic resources. However, this alternative would not meet any of the objectives established for the proposed Project.

In accordance with the State CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative, a comparative evaluation of the remaining alternatives indicates that the No APM Alternative would be the environmentally superior alternative relative to the other alternatives. Without the APM guideway, the No APM Alternative would result in less construction related impacts to air quality, greenhouse gases, and construction surface transportation. However, the proposed Project would result in fewer vehicle miles travelled and thus, less GHG emissions.

It is important to note, while the No APM Alternative is considered the environmentally superior alternative, it would not avoid the significant unavoidable impacts that would occur under the proposed Project with respect to construction- or operational-related emissions, greenhouse gas emissions or off-airport traffic impacts. Additionally, the proposed Project would result in fewer vehicle miles travelled and thus, less GHG emissions. However, the environmentally superior No APM Alternative would eliminate the significant and unavoidable impacts to visual resources of the Theme Building and cultural resources.

The One ITF Alternative would result in greater environmental impacts compared to the proposed Project. Most notably, in comparison to the other alternatives and the proposed Project, the One ITF Alternative would result in significant impacts to land use and planning in terms of plan consistency. The One ITF Alternative would incrementally reduce some of the less than significant impacts of the proposed Project related to aesthetics (shading and light and glare), air quality (construction), hazards and hazardous materials, and energy. Impacts to aesthetics (visual character), air quality, cultural resources, greenhouse gas emissions, public services (schools), and off-Airport traffic would be similar as the proposed Project and it would not reduce the significant unavoidable impacts that would occur under the proposed Project with respect to these areas.

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Table 1-4 (1 of 4): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Aesthetics							
Visual Character	Significant and Unavoidable	**Less than significant**	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Shading	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Light and Glare	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Air Quality and Human Health							
Air Quality							
Construction	Significant and Unavoidable	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Operations	Significant and Unavoidable	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Human Health							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Biological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation

Table 1-4 (2 of 4): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Cultural Resources							
Historic Resources	Significant and Unavoidable	**Less than significant**	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Archaeological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Paleontological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Human Remains	Less than significant	Less than	Less than significant	Less than significant	Less than significant	Less than significant with	Less than significant
Greenhouse Gas Emissions							
No Net Increase (quantifiable)	Less than Significant	No impact	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Plan/Policy Consistency	Significant and Unavoidable	Significant	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazards and Hazardous Materials							
Unauthorized and Uncontrolled Release	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Exposure of Workers	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant

Table 1-4 (3 of 4): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Hazardous Emissions and Materials within ¼-mile of School	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Interfere with Ongoing Remediation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Interfere with Emergency Response or Emergency Evacuation Plan	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Hydrology, Water Quality, and Groundwater	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Land Use and Planning	Less than significant	Significant and Unavoidable	Significant and unavoidable	Less than significant	Significant and Unavoidable	Less than significant	Less than significant
Noise							
Road Traffic Noise	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Construction Traffic and Equipment Noise and Vibration	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Transit Noise and Vibration	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant

[Draft]

Table 1-4 (4 of 4): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Population and Housing	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Public Services							
Fire Protection	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Law Enforcement	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Schools	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Transportation/Traffic							
On-Airport Traffic	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Off-Airport Traffic	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable
Construction Traffic	Significant and unavoidable	Less than significant	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Utilities and Service Systems and Energy							
Energy	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Water	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

[Draft]

Table 1-5 (1 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Aesthetics							
Visual Character	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Shading	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Light and Glare	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Air Quality and Human Health							
Air Quality							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Less than significant with mitigation
Human Health							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Biological Resources	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Cultural Resources							
Historic Resources	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Archaeological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Paleontological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation

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Table 1-5 (2 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Human Remains	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Greenhouse Gas Emissions							
Per Capita Efficiency Threshold (quantifiable)	Significant and Unavoidable	No impact	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Plan/Policy Consistency	Significant and Unavoidable	Significant	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazards and Hazardous Materials							
Unauthorized and Uncontrolled Release	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exposure of Workers	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Interfere with Ongoing Remediation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Interfere with Emergency Response or Emergency Evacuation Plan	Less than significant	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Hydrology, Water Quality, and Groundwater	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Land Use and Planning	Less than Significant	Significant and unavoidable	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

[Draft]

Table 1-5 (3 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Noise							
Road Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Transit Noise and Vibration	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Population and Housing	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Public Services							
Fire Protection	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than Significant
Law Enforcement	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than Significant
Schools	Less than significant	Significant and unavoidable	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Transportation/ Traffic							
On-Airport Traffic	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Off-Airport Traffic	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Construction Traffic	Significant and unavoidable	Less than significant	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Utilities and Service Systems and Energy							
Energy	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Water	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

1.5.1 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

Fifty comment letters were received during the public circulation period for the Initial Study/NOP prepared for this EIR, including those received at the Public Scoping Meetings held on February 19 and February 21, 2015. The primary environmental concerns associated with the proposed LAX Landside Access Modernization Program and potential future related development that were raised are summarized below. The NOP comments are included in **Appendix A** of this EIR.

1.5.1.1 Transportation Impacts

Concern was raised on potential traffic volumes on local roads and freeways, the need for a truck management plan, safety and operational concerns for specific highway off-ramps, the need to conduct a Congestion Management Program analysis, transit impacts, cumulative traffic impacts given other LAX-area projects, and the need for traffic mitigation measures for proposed Project and cumulative impacts. Commenters requested a full analysis of traffic impacts for both operations and construction and expressed concern about the number of parking spaces being added. Specific concerns were expressed for potential traffic impacts to Arbor Vitae Street, W. Century Boulevard, Sepulveda Boulevard, and La Cienega Avenue. Comments also requested integration of transit, bicycle, and pedestrian considerations into proposed Project design.

1.5.1.2 Construction Phasing and Impacts

Concern was raised on the location of potential construction staging and laydown areas, construction traffic routes, how LAWA would optimize construction phasing to minimize impacts, potential impacts to local businesses during construction, impacts to transit during construction, and what mitigation measures would be implemented.

1.5.1.3 APM Alignment and Operation

Concern was raised on walking distances and grade changes associated with the proposed APM, analysis of other APM alignment alternatives to minimize walk distances and provide a better level of customer service, adding more stations in the CTA, and APM travel times. Commenters requested that baggage check-in, baggage assistance and ticketing options/remote check-in facilities be considered.

1.5.1.4 Mobility Issues

Concern was raised on mobility issues related to elderly and handicapped passengers, families, and international travelers, particularly as it related to luggage and wayfinding. Commenters also requested that direct and convenient bus access be provided as well as bicycle amenities.

The Reduced Phase 1 Improvements Alternative and Increased TDM Alternative would have the same impacts as the proposed Project, but would incrementally reduce some of the impacts of the proposed Project. The Reduced Phase 1 Improvements Alternative would incrementally reduce some construction impacts during Phase 1, but would have greater construction-related impacts in Phase 2 and the same operational impacts as the proposed Project. The Increased TDM Alternative would have the same construction-related impacts as the proposed Project, but would incrementally reduce the operational traffic impacts after Phase 1. Finally, the Reduced Potential Future Related Development Alternative would have similar impacts as the proposed Project in Phase 2, but would reduce operational air quality impacts to less than significant when compared to the proposed Project in Phase 2. The Reduced Potential Future Related Development Alternative would incrementally reduce construction impacts related to the potential future related development, as only half the proposed development would occur. However, the Reduced Potential Future Related Development Alternative would not meet all project objectives, specifically ensuring the highest and best use for reuse of any potential future surplus property in compliance with FAA grant obligations.

While the No APM Alternative is considered the environmentally superior alternative, it would not fully support the proposed Project's objectives. The No APM Alternative would not provide a direct connection to transit or more efficient access to rental cars, and therefore would require the continued use of shuttle buses for transit connections and rental car operations. With these vehicles still traveling through the CTA, on-airport traffic conditions would not improve, and therefore, the No APM Alternative would not achieve the proposed Project objective of relieving congestion in the CTA and surrounding street system.

Therefore, although the No APM Alternative is the environmentally superior alternative, it would have similar significant unavoidable impacts related to operational-related emissions, greenhouse gas emissions, and off-airport traffic. Furthermore, the No APM Alternative would not fully support the objectives of the proposed Project.

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2. Description of the Proposed Project

2.1 Background and Project Overview

Los Angeles World Airports (LAWA) is modernizing Los Angeles International Airport (LAX or "the Airport") to improve passenger quality-of-service and provide world class facilities for its customers. Recent projects, either completed or underway at LAX, are transforming the Airport. These projects include the transformation of the Tom Bradley International Terminal (TBIT) with the Bradley West project, a new Midfield Satellite Concourse west of TBIT, a new West Aircraft Maintenance Area, a new Central Utility Plant, lighting and wayfinding improvements to the passenger terminals, runway safety area improvements, renovation of Terminals 1, 5, 6, and 7, and the overhaul of all terminal concessions and retail/duty free shops. LAWA is also planning additional terminal improvements including providing secure connections between Terminals 1, 2, 3, and TBIT, as well as renovating Terminals 2 and 3. To further transform LAX into a modern airport and to address increasing levels of traffic congestion at and around LAX, LAWA is working to redevelop the ground access system to the Airport, which would include a seamless connection to the regional rail and transit system.

Today, the passenger experience for those arriving or departing LAX is often severely compromised by roadway congestion in LAX's Central Terminal Area (CTA)[1] and on nearby streets. Compounding the local traffic congestion, 12 rental car agencies operate independent shuttles to transport passengers between the CTA and their individual rental car facilities that are located throughout the surrounding area. Unlike many major U.S. airports, LAX does not have a consolidated rental car facility that provides a convenient and centralized location for airport passengers to pick-up and return cars. In 2015, there were a total of over 1.1 million rental car shuttle trips on the upper and lower level roadways of the CTA. Moreover, LAX also lacks a direct connection to the Los Angeles County Metropolitan Transportation Authority (Metro) transit system. Currently, passengers and employees who want to take public transportation to LAX must either take a bus (often requiring a transfer from the City Bus Center on W. 96th Street to the LAWA-operated Lot C shuttle to reach the CTA), or take the Metro Green Line light rail to the station at Imperial Highway and Aviation Boulevard. They must then transfer to the LAWA-operated G shuttle to the Airport, which is a trip of approximately 2 miles.

1 The CTA refers to the main passenger accessible features of the Airport that consists of terminals/concourses and parking encircled by a roadway system.

Today, regardless of transportation mode, passengers, employees and visitors face uncertain travel times, congestion and overcrowding to and from LAX. Approximately 63 percent of all departing air passengers used private vehicles, taxis, limousines, or Transportation Network Companies (TNCs) such as Uber or Lyft to get to LAX in 2015[2]; this percentage is even greater for those departing passengers who are residents. During peak periods, over 6,000 vehicles enter the Airport on an hourly basis. Some of the challenges LAX currently experiences include:

- Heavy traffic congestion during peak hours
- Buses, shuttles and cars competing for limited space
- Passengers stuck in crowded and uncomfortable conditions along a narrow curb

Each terminal has an arrivals and departures curb where people can be picked-up or dropped-off, along with parking structures located within the interior of the roadway loop. Passengers and visitors at LAX who drive private vehicles through World Way, the single roadway loop in the CTA, often struggle to reach the curb in front of their terminal or parking structure because of the myriad of commercial shuttle buses and other vehicles in the CTA. Some passengers, who choose to park remotely, stay in local hotels, or take public transit to LAX, must take a bus, shuttle, taxi or similar service into the CTA to the appropriate terminal. The hotel, off-Airport parking, and rental car shuttles circle the main upper level roadway (World Way) to drop-off passengers and then circle the lower level roadway to pick-up passengers, adding to overall congestion within the CTA. In addition to private vehicles and hotel and car rental shuttles, LAX is served by other passenger transportation modes, such as FlyAway[3] buses, shared ride vans, limousines and other commercial vehicles, all competing for limited space along the drop-off and pick-up curbs. All of these vehicles contribute to congestion on the surrounding roadways, which results in increased traffic in the neighboring communities.

2.1.1 EVOLUTION OF THE LAX LANDSIDE ACCESS MODERNIZATION PROGRAM

The shortcomings of the current LAX landside[4] access system have long been identified by LAWA. In the 2004 LAX Master Plan, LAWA sought to address these congestion problems by proposing transportation facilities that would provide new options for passengers and employees to access the passenger terminal areas. These facilities, which were approved at a programmatic level in 2004, included a ground transportation center and an intermodal transportation center located outside the CTA; these centers were to be served by an automated people mover (APM) system. To respond to post 9/11 concerns, the LAX Master Plan's Preferred Alternative required passengers and employees to be picked-up or dropped-off without driving into the CTA.

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2 Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings*, February 2016.

3 A FlyAway is a facility which allows airline passengers and employees to park nearer to their point of origin and board a LAWA-operated bus to the airport.

4 Airports are generally divided into landside and airside areas. Landside areas are accessible to the public and include roadway networks, parking lots, rental car operations, and public transportation facilities. Airside areas are restricted areas 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 service roads.

Additionally, the 2004 LAX Master Plan identified a need for a consolidated rental car facility, which was located outside the CTA and also connected to the APM system.

In its 2005 Record of Decision (ROD),[5] the Federal Aviation Administration (FAA) approved the ground transportation improvements as described in the approved LAX Master Plan and as depicted on the LAX Airport Layout Plan (ALP) adopted in connection with the ROD. LAWA has since refined these projects as the LAX Landside Access Modernization Program, in part to be consistent with updated regional transit plans for the Region and to address stakeholder feedback. As part of the required environmental review process for the LAX Landside Access Modernization Program, the FAA has initiated environmental review in compliance with the National Environmental Policy Act (NEPA) and other federal requirements. Because the proposed LAX Landside Access Modernization Program is not the same project evaluated in the 2004 LAX Master Plan or the associated Final Environmental Impact Statement/Final Environmental Impact Report, the Project is being analyzed as a stand-alone project under a separate environmental review.

In connection with approval of the LAX Master Plan Program in December 2004, the City Council approved the LAX Specific Plan.[6] The LAX Specific Plan contains zoning and land use regulations and procedures for the processing of future individual projects and activities anticipated under the LAX Master Plan Program to ensure consistency with the LAX Plan[7] – the City of Los Angeles' general plan component for LAX – and to ensure the adequacy of environmental review and documentation of those individual projects. Section 7.H of the LAX Specific Plan (as approved in 2004) required LAWA to complete a "Specific Plan Amendment Study" prior to seeking a determination of compliance with the LAX Plan, including development of the Ground Transportation Center (GTC), and construction of the APM from the GTC to the CTA.

LAWA completed the Specific Plan Amendment Study (SPAS)[8] and a Program Final EIR[9] evaluating the environmental effects of the SPAS alternatives in 2013. The SPAS comprehensively addressed potential alternative designs, technologies, and configurations for certain LAX Master Plan projects identified as the "Yellow Light" projects, subject to additional planning and environmental review prior to implementation. The SPAS studied airfield improvements, terminal improvements, and ground access improvements, including alternatives to the GTC and construction of the APM from the GTC to the CTA as envisioned in the LAX Master Plan, at a programmatic level. Following completion of the SPAS and certification of the SPAS Final EIR, the Board of Airport Commissioners (BOAC) and the Los Angeles City Council selected the LAWA "Staff

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5 U.S. Department of Transportation, Federal Aviation Administration, *Record of Decision, Proposed LAX Master Plan Improvements,* May 20, 2005, Available: http://www.faa.gov/airports/environmental/records_decision/lax/#lax05, accessed August 25, 2016.

6 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

7 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

8 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.

9 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.

APM – Automated People Mover

CONRAC – Consolidated Rental Car Facility

CTA – Central Terminal Area

ITF – Intermodal Transportation Facility

MSF – APM Maintenance and Storage Facility

TPSS – Traction Power Substation

Recommended Alternative" as the best alternative to the problems the Yellow Light projects were designed to address, subject to future detailed planning, engineering, and project-level environmental review. The LAX ground access improvements selected for further study as part of the Staff Recommended Alternative included, among other things, development of an Intermodal Transportation Facility (ITF), Consolidated Rental Car Facility (CONRAC), parking outside of the CTA, and an APM linking these new facilities to the CTA and connecting them to the planned Metro facilities. These components form the conceptual framework of the proposed LAX Landside Access Modernization Program.

Although components of the LAX Landside Access Modernization Program were contained in the LAX Master Plan and the LAX Specific Plan Amendment Study, the proposed Project for ground access improvements at LAX has substantively evolved from the programmatic plans contained in these previous program level documents. Thus, because the current plan evaluated in this Environmental Impact Report (EIR) substantively differs from programmatic concepts in the LAX Master Plan and SPAS, this EIR does not tier off of the environmental documents associated with those plans; it is a stand-alone analysis of LAWA's current project –level plans for ground access improvements at LAX. Because the LAX Landside Access Modernization Program does not tier off of the LAX Master Plan EIR, this Project is not subject to the LAX Master Plan commitments and mitigation measures; thus, LAWA has identified mitigation measures specific to this Project as appropriate. The LAX Master Plan commitments and mitigation measures are still in effect for all LAX Master Plan projects, just as other Project-specific mitigation measures are in effect for other non-LAX Master Plan projects.

2.1.2 PROPOSED LAX LANDSIDE ACCESS MODERNIZATION PROGRAM

As part of the overall modernization of LAX, LAWA proposes to implement the LAX Landside Access Modernization Program to continue to advance and transform LAX's access system. The LAX Landside Access Modernization Program ("Project") seeks to improve access options and the travel experience for passengers; shift the location where different modes of traffic operate within the CTA and on the surrounding street network; and provide a direct connection to the Metro rail and transit system. By implementing this Project, LAWA seeks to provide more travel time certainty, reduce traffic congestion and improve air quality in and around the Airport.

The proposed Project includes several individual components that collectively would improve access to and from LAX. These components include an APM system, ITFs, a CONRAC, pedestrian walkway connections to the passenger terminals within the CTA, and roadway improvements. In addition, LAWA proposes to implement changes to its policies and procedures in regards to commercial vehicle operations and plans to establish and enhance programs to encourage airport and other employees to use alternative means of transportation.

Metro is independently working on a connection to the airport along the Metro Crenshaw/LAX light rail line at their proposed Airport Metro Connector (AMC) 96th Street Transit Station to be located at Aviation Boulevard and 96th Street, about 1.5 miles east of the entry to the CTA. LAWA proposes to provide a direct connection from the APM to Metro's station at W. 96th Street, allowing passengers to seamlessly transition between the airport APM and the Metro transit system. Metro released a Draft EIR assessing the potential environmental effects of the proposed Airport Metro Connector (AMC) 96th Street Transit Station in June 2016.[10]

Upon Project implementation, the APM system would offer passengers an opportunity to bypass the existing roadway loop in the CTA. Departing passengers would be able to access the APM system from the ITFs, the CONRAC, or the Metro station. The ITFs and CONRAC would serve as new points of access to LAX, catering to all types of Airport passengers and users. The process would be seamless for arriving passengers as well. Arriving passengers would be able to pick-up their baggage, board the APM system, and be quickly and efficiently conveyed directly to the ITFs, CONRAC, or AMC 96th Street Transit Station.

Public access into the CTA in the future would continue to function the way it does today. However, the purpose of the APM system is to reduce the number of commercial and private vehicles within the CTA, which would result in improved traffic flows on CTA and surrounding roadways, as well as fewer vehicle miles traveled and vehicle hours traveled. The APM system would provide passengers several different options on how to access LAX and would give LAWA the ability to implement pricing strategies, policies, and procedures that would result in a reduced number of vehicles in the CTA. The proposed APM would consist of a fixed guideway transportation system that would provide free access to the CTA for passengers, employees, and other users of LAX, 24 hours a day. Constructed completely above grade, the APM would connect to the passenger terminals in the CTA through a pedestrian walkway system located above the existing roads and curb areas in the CTA.

The APM would transport passengers between the passenger terminals and the other main components of the Project located east of the CTA, including a CONRAC facility, new public parking facilities, and locations for passenger pick-up and drop-off at the ITF East and the ITF West, as well as Metro's proposed AMC 96th Street Transit Station. The ITFs would provide access to the terminals for those that choose to drive their vehicle to LAX and park, including both long- and short-term parking. In addition, the ITFs would have designated space for commercial transportation providers, including, but not limited to, off-airport parking operators, long-distance shuttle operators, and hotel shuttles. The ITFs would enable passengers to access commercial transportation providers while eliminating the need for the providers to enter and circle through the CTA. The ITFs may include amenities and concessions for passengers, would offer long- and short-term parking options with close proximity to the APM system, provide new meet and greet locations for arriving passengers, and kiss and ride areas for departing passengers. In addition, various roadway improvements would accommodate the APM system, the CONRAC, and ITFs, and improve overall traffic circulation and vehicle access to and from LAX from all directions.

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10 Los Angeles County Metropolitan Transportation Authority (Metro), *Airport Metro Connector 96th Street Transit Station, Draft Environmental Impact Report*, June 2016.

The Project would necessitate amendments to the LAX Specific Plan; the LAX Plan; the Westchester-Playa del Rey Community Plan; and the Mobility Plan 2035, the Transportation Element of the City of Los Angeles General Plan. These plan amendments, although not limited to those required to implement the proposed Project would reflect updated Specific Plan boundaries and the location of the Project components, promote pedestrian and multi-modal activities that would support trip reduction strategies, including transit use to LAX, and enable implementation of the proposed Project. The proposed Project would also require the subdivision of parcels, creation of new tract maps, and/or other reconfiguration of parcels, the dedication and vacation of certain public rights-of-way, and zoning change approvals (see Section 2.8 for further discussion of plan amendments and other entitlements).

LAWA would utilize adjacent land for construction staging, construction activities, and/or temporary relocation areas to build the APM, CONRAC, ITFs, roadway improvements and other Project elements. Once the APM, CONRAC, and ITFs are constructed and operational, which is anticipated by early 2024, additional future complementary development may occur on land owned by LAWA located adjacent to these facilities. Such future development is envisioned to support the needs of passengers, visitors, employees, and guests of hotels in the area. Because no specific development projects are proposed for these areas, certain assumptions concerning this potential future related development are identified, and impacts are assessed in this EIR at a program level. Accordingly, such future related development would be subject to subsequent environmental review once LAWA develops more detailed and definitive plans for these areas.

2.2 Project Objectives

Section 15124(b) of the State CEQA Guidelines states that the Project Description shall contain "[a] statement of the objectives sought by the proposed project." In addition, Section 15124(b) of the State CEQA Guidelines further states, "[t]he statement of objectives should include the underlying purpose of the project."

The LAX Landside Access Modernization Program would support the ongoing modernization of LAX by improving the landside transportation system serving the Airport and improving the passenger and visitor experience. LAX is the world's busiest origin and destination airport; more passengers begin and end their trip at LAX than at any other airport. In 2015, LAX handled 655,564 aircraft landings and takeoffs and 74.9 million passengers (the third busiest airport in the United States, and the seventh busiest in the world)[11]. Limited options for ground vehicles to enter the CTA currently result in more time spent in traffic, uncertain travel times, congestion and delay in the CTA, as well as back-ups onto the surrounding local and regional roadway network. The large number of shuttles serving rental car agencies, hotels, and parking facilities

[11] Los Angeles World Airports, "Traffic Comparison (TCOM) Los Angeles International Airport, Calendar YTD January to December 2015," January 22, 2016, Available: http://www.lawa.org/uploadedfiles/LAX/statistics/tcom-1215.pdf; Los Angeles World Airports, "LAX Passenger Traffic Comparison by Terminal, January to December 2014/2015," Available: http://www.lawa.org/uploadedfiles/LAX/statistics/m_share-2015.pdf.

located in the LAX vicinity contributes to congestion in the CTA and surrounding area. Compounding the congestion problem at LAX is the lack of a direct and convenient connection to transit.

The underlying purposes of the proposed Project are to improve access to LAX and relieve congestion on Airport and surrounding roadways. The Project objectives for the LAX Landside Access Modernization Program that support the underlying purposes are:

(a) Enhance the passenger experience by providing new access options for all modes of travel, including direct connections to transit, convenient parking, and commercial vehicles;

(b) Provide easier and more efficient access to rental cars and non-CTA parking facilities;

(c) Relieve congestion at LAX and on the surrounding street system by developing a flexible transportation system that provides alternatives to the CTA for passengers, airport and other employees, and airport-related vendors accessing LAX;

(d) Promote the sustainability of LAX by improving the efficiency and operation of the surface transportation system in which LAX operates;

(e) Enhance and integrate the overall design of LAX Landside Access Modernization Program facilities with existing CTA structures and new airport facilities both inside and outside the CTA;

(f) Maintain airport operations during construction; and

(g) Ensure the highest and best use for reuse of any potential future surplus property in compliance with FAA grant obligations.

These objectives are consistent with the following general goals LAWA has established for LAX as part of its sustainability program and policies that strive to minimize the impact of LAX operations on the surrounding communities:

- Build new efficient transportation facilities that conserve energy, water, and other resources.
- Reduce traffic congestion and vehicle miles traveled, thereby improving air quality.
- Reduce air emissions from transportation sources to comply with Senate Bill (SB) 375.
- Design and construct the new transportation facilities in a manner that minimizes disruptions to airport operations.
- Design and construct the new transportation facilities in a manner that integrates with existing and new airport facilities.

- Utilize airport property located next to the new transportation facilities for construction staging, construction activities, and/or temporary relocation areas to build the APM, CONRAC, ITFs, roadway improvements, and other Project elements. Upon completion of the new transportation facilities, consider new uses complementary to LAX and the surrounding uses that meet the needs of passengers, visitors, employees, and guests of hotels in the area.
- Generate additional employment opportunities and economic activity that benefit the communities located around LAX and the City of Los Angeles.

2.3 Project Location

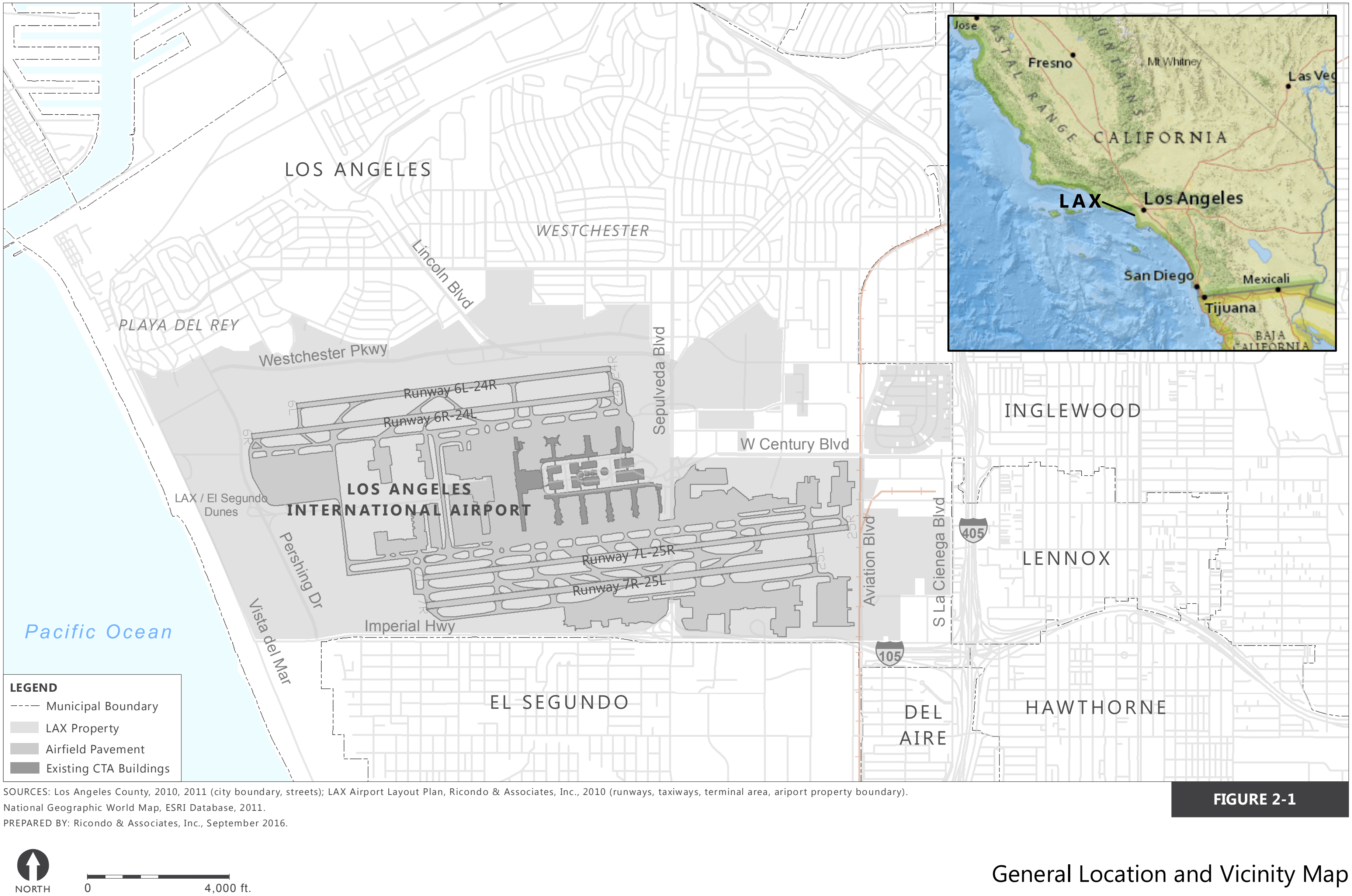
LAX is located at the western edge of the City of Los Angeles (see **Figure 2-1**) within a developed, urbanized region consisting of airport, commercial, and residential areas. In addition, the region contains other transportation facilities, including interstate highways and regional rail facilities. To the north of LAX are the communities of Westchester and Playa del Rey in the City of Los Angeles; to the east are the City of Inglewood, City of Hawthorne, and unincorporated areas under the jurisdiction of Los Angeles County; to the south is the City of El Segundo; and to the west is the Pacific Ocean. Regional access to LAX is provided by the San Diego Freeway (Interstate 405 or I-405), which is a north-south freeway located east of LAX, and the Century Freeway (Interstate 105 or I-105), which is an east-west freeway, located south of LAX. Major roadways serving LAX include Century Boulevard, Imperial Highway, Westchester Parkway/W. Arbor Vitae Street and Lincoln Boulevard/Sepulveda Boulevard (State Route 1).

As shown on **Figure 2-2**, the Project area is roughly bound by TBIT on the west, I-405 on the east, Westchester Parkway/W. Arbor Vitae Street on the north, and I-105 on the south. The Project area has been divided into three zones to facilitate analysis: 1) the Central Terminal Area, 2) East of the Central Terminal Area, and 3) Aviation Boulevard/Imperial Highway Area. The Central Terminal Area (CTA) is the area located west of Sepulveda Boulevard delineated by the LAX passenger terminals that are located along World Way. The boundaries of the East of the Central Terminal Area are W. Arbor Vitae Street/LAX property boundary on the north, I-405/La Cienega on the east, W. Century Boulevard and the CTA access ramps on the south, and Sepulveda Boulevard on the west. The boundaries of the third area are W. 111th Street on the north, Hindry Avenue on the east, Imperial Highway on the south, and Aviation Boulevard on the west. All three of these areas are located entirely within the City of Los Angeles.

2.4 Project Characteristics

The proposed Project includes the following components:

- An APM system with six APM stations connecting the CTA via an above-grade fixed guideway to new proposed ground transportation facilities;
  - Passenger walkway systems connecting the APM stations to passenger terminals, parking garages, and ground transportation facilities;



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-1

General Location and Vicinity Map

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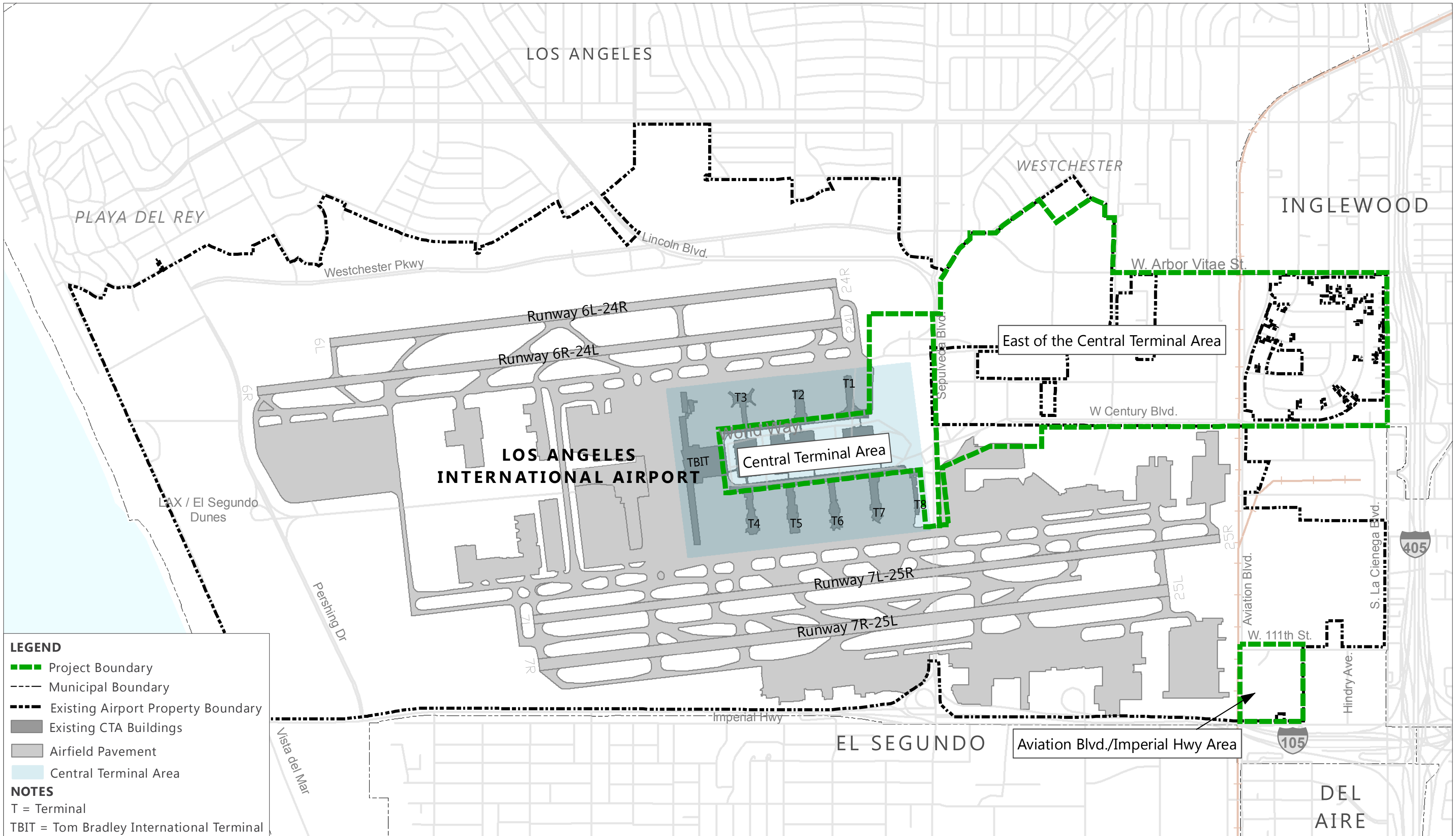

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-2

Project Location

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   - Modifications to existing passenger terminals and parking garages to support the APM walkway system connections, including vertical circulation (elevators, escalators, and stairs) cores to garage levels and to the arrival, departure, and concourse levels at the terminals;
   - An APM maintenance and storage facility (MSF); and
   - APM power substations.
- A CONRAC designed to meet the needs of rental car agencies serving LAX with access to the CTA via the APM;
- Two ITFs providing airport parking and pick-up and drop-off areas outside the CTA for private vehicles and commercial shuttles;
- Roadway improvements designed to improve access to the proposed facilities and the CTA and reduce traffic congestion in neighboring communities;
- Security features, including security fencing, surveillance cameras, security lighting, and emergency phones/call boxes, to reduce demands on the Los Angeles World Airports Police Department (LAWAPD);
- Fire safety features in compliance with fire and building code requirements including fire hydrants, fire sprinklers, and fire extinguishers;
- Utilities infrastructure, both new and modified, to support the proposed Project;
- Changes to pricing, policies and procedures in regards to commercial vehicle operations at LAX;
- Incorporation of the LAX Design Guidelines into the proposed Project (see **Appendix B**);
- Land acquisition, subdivision of parcels, creation of new tract maps, and/or other reconfiguration of parcels, dedications and vacations of public rights-of-way, as well as zoning change approvals;
- Future potential related development on land owned by LAWA located adjacent to the new proposed ground transportation facilities (see Section 2.7); and
- Enabling projects to allow construction of the proposed Project, including utility relocation and demolition of certain existing facilities, some of which would be reconstructed (see Section 2.5).

Figure 2-3 shows a high-level conceptual view of the Project. **Figure 2-4** provides an illustration of the elements associated with the proposed Project. A description of the location of each project component is provided in **Table 2-1**.

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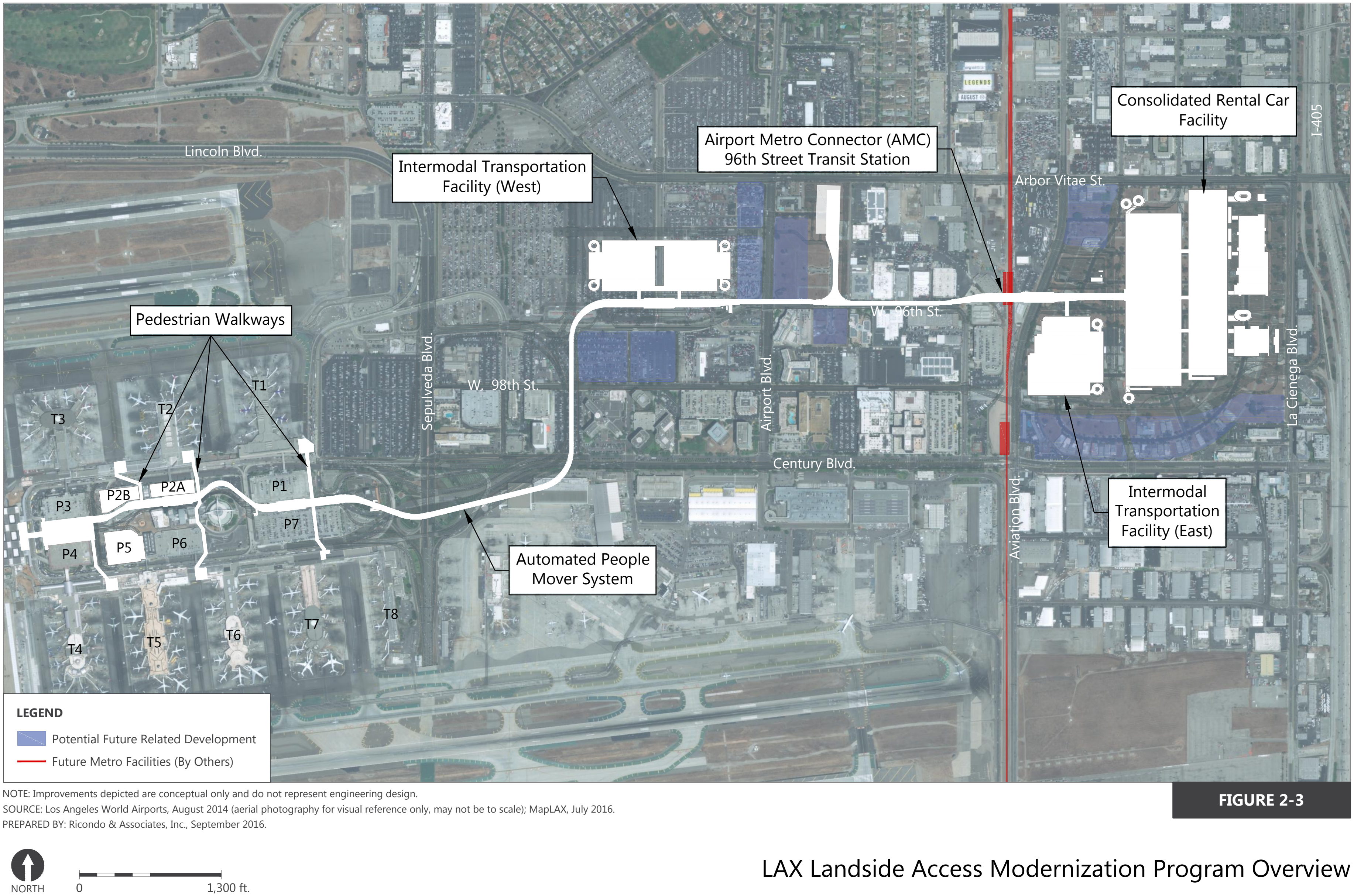

NOTE: Improvements depicted are conceptual only and do not represent engineering design.
SOURCE: Los Angeles World Airports, August 2014 (aerial photography for visual reference only, may not be to scale); MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-3

LAX Landside Access Modernization Program Overview

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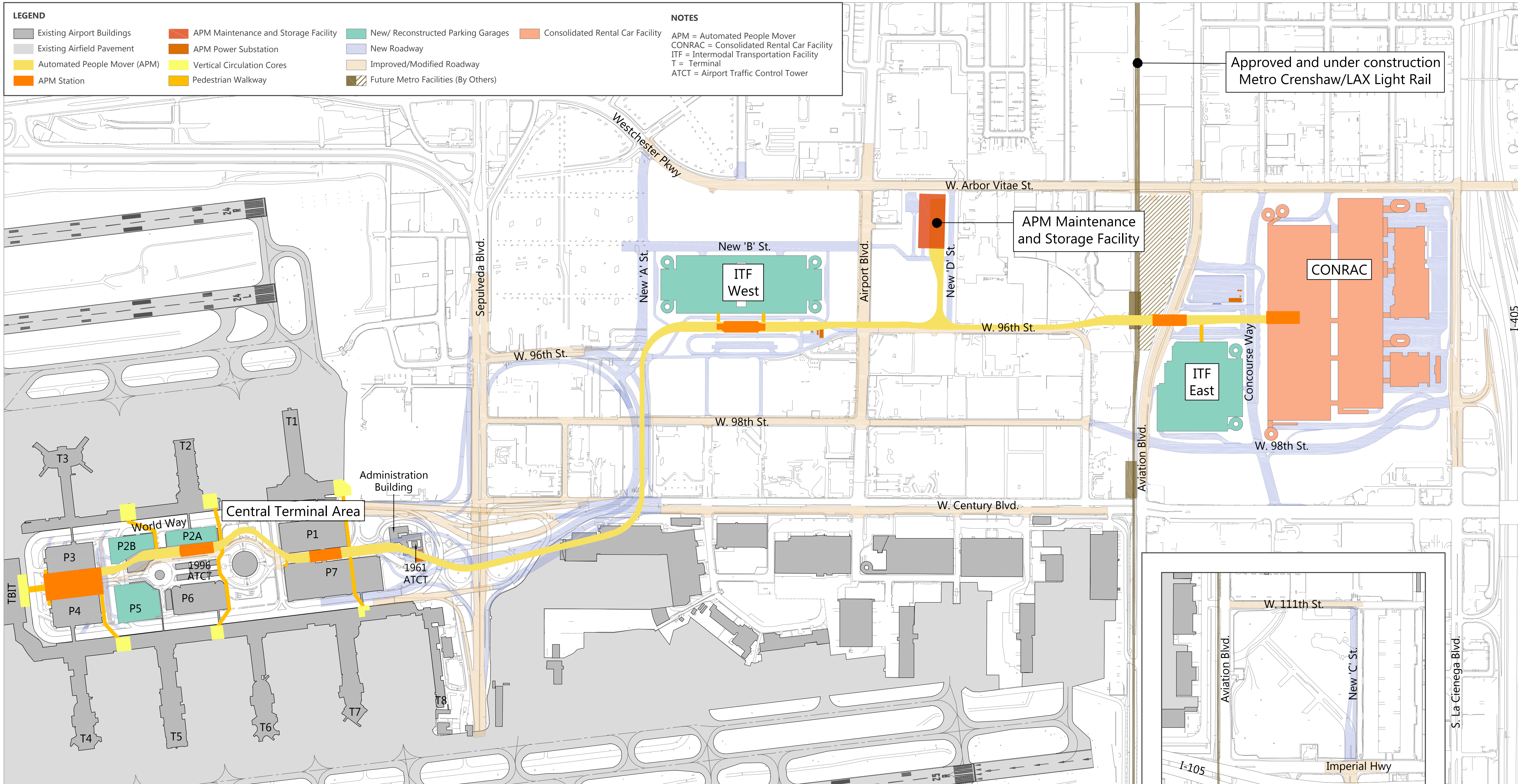

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 800 ft.

FIGURE 2-4

LAX Landside Access Modernization Program Components

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Table 2-1 (1 of 2): Project Component Location

PROJECT COMPONENT	GENERAL LOCATION	APPROXIMATE SIZE
APM System		25 acres
APM Guideway	The APM guideway would begin on the western end of the CTA, directly east of TBIT. The guideway would extend east along the northern part of Center Way for approximately half a mile to a point just west of the Clifton A. Moore Administration Building (1 World Way), where the APM guideway would turn slightly to the south, cross S. Sepulveda Boulevard, and then turn slightly north to Century Boulevard. At Century Boulevard, the APM guideway would continue north perpendicular to Century Boulevard along New 'A' Street for a quarter of a mile. The alignment would then turn east along W. 96th Street for approximately 1 mile until reaching the eastern terminus at the CONRAC.	2.25 miles
APM Stations	Six stations would be located along the APM guideway: three within the CTA and three outside of the CTA. • The West CTA Station would be located at the western terminus of the APM guideway, situated between Parking Garages P3 and P4, approximately 150 feet east of TBIT. • The Center CTA station would be located along the APM guideway approximately 670 feet to the northeast of the West CTA station. This station would be located directly south of and adjacent to Parking Garage P2A, and 120 feet north of the 1996 Airport Traffic Control Tower. • The East CTA station would be located on the eastern end of the CTA, between Parking Garages P1 and P7, perpendicular to and approximately 240 feet east of East Way. • The APM station at the ITF West would be located approximately 750 feet directly west of the W. 96th Street/Airport Boulevard intersection and approximately 680 feet north of W. 98th Street. • The APM station at the ITF East would be elevated above Aviation Boulevard, located approximately 1,000 feet south of W. Arbor Vitae Street and approximately 1,500 feet north of W. Century Boulevard. Metro's proposed AMC 96th Street Transit station would be located west of Aviation Boulevard, but would connect via vertical circulation to the ITF East APM station. • The CONRAC APM Station would be the eastern terminus of the APM guideway, located approximately 630 feet directly east of the ITF East APM station.	3.8 acres
APM Maintenance and Storage Facility	The APM Maintenance and Storage Facility would be located on the south side of W. Arbor Vitae Street, approximately 300 feet east of Airport Boulevard.	7.3 acres
APM Power Substations	Three or more traction power substations (TPSS) would provide power to the APM guideway. These facilities would be generally located on the eastern end of the CTA, adjacent to the ITF West, and adjacent to the ITF East: • The CTA TPSS would be located adjacent to World Way, approximately 90 feet south of the 1961 Airport Traffic Control Tower. The site for this facility is currently occupied by the Clifton A. Moore Administration Building. • The ITF West TPSS would be located directly west of the W. 96th Street/Airport Boulevard intersection, approximately 270 feet west of Airport Boulevard and 640 feet north of W. 98th Street.	1 acre

Table 2-1 (2 of 2): Project Component Location

PROJECT COMPONENT	GENERAL LOCATION	APPROXIMATE SIZE
APM Power Substations (continued)	• The ITF East/CONRAC TPSS would be located north of the APM guideway, between the ITF East APM station and the CONRAC APM Station. The facility would be located approximately 380 feet east of Aviation Boulevard and approximately 860 feet south of W. Arbor Vitae Street. • A fourth TPSS, if needed, could be located adjacent to the APM MSF.	
ITF West	The ITF West facility would be located generally in the area bound by W. 96th Street to the south, Airport Boulevard to the east, New B Street to the north, and New A Street to the west. Specifically, the ITF West would be located approximately 830 feet north of W. 98th Street, approximately 300 feet west of Airport Boulevard, and approximately 530 feet south of Westchester Parkway/W. Arbor Vitae Street.	33 acres
ITF East	The ITF East facility would be located generally east of and adjacent to Aviation Boulevard between W. 96th and W. 98th Streets. The ITF East would be located approximately 630 feet north of W. Century Boulevard.	22 acres
CONRAC Facility	The CONRAC would be located in the area west of La Cienega Boulevard, north of W. Century Boulevard, east of Aviation Boulevard and south of W. Arbor Vitae Street.	69 acres
Roadway Improvements	A series of roadway improvements would occur generally in the areas of: • West Way and Center Way within the CTA; • S. Sepulveda Boulevard and W. Century Boulevard, just east of the CTA; • East of the CTA, bound generally by W. Century Boulevard to the south, S. Sepulveda Boulevard to the west, the I-405 to the east and Westchester Parkway/W. Arbor Vitae Street to the north; and • Aviation Boulevard and Imperial Highway, bound generally by W. 111th Street on the north, Hindry Avenue on the east, Imperial Highway on the south, and Aviation Boulevard on the west. See Section 2.4.4 for a detailed description of each roadway improvement.	6.5 miles

SOURCE: MapLAX, *Los Angeles International Airport Landside Access Modernization Program, Program Brief,* January 2016; MapLAX, July 2016; Ricondo & Associates, Inc., July 2016.
PREPARED BY: Ricondo & Associates, Inc., February 2016.

2.4.1 AUTOMATED PEOPLE MOVER SYSTEM

The APM system is the primary component of the proposed Project. The APM is designed to provide reliable, time-certain access to the CTA for passengers, employees, and other users. Today, regardless of the mode of travel, all Airport users end up using the existing roadway and curb areas in the CTA. With the implementation of the APM, passengers and employees would be able to access their terminal without utilizing the CTA roadway or curb systems. The APM trains would operate free of charge to Airport users and employees, 24 hours a day, 7 days per week.

The proposed APM would be a fully-automated, grade-separated train system, consisting of an elevated dual-lane guideway with six stations. The APM guideway would be built completely above grade to provide a predictable and high level of service for those utilizing the APM to reach the CTA. The grade separation would minimize any effect on the existing street system, and minimize disruption to Airport operations during construction. The APM system is being designed to accommodate a projected demand of approximately 5,800 travelers and their luggage during the peak hour in each direction.[12]

To develop LAWA's proposed APM alignment alternative, LAWA staff conducted an alternatives analysis of the APM alignment through the CTA, as further discussed in Chapter 5, *Alternatives*. The alternatives addressed different vertical alignments (below grade, at grade, and above grade) and horizontal alignments (a loop alignment around the CTA, a scissors alignment - with the APM located on the north and south sides of the CTA, and a spine alignment with the APM located in the center of the CTA). LAWA staff also evaluated variations on the number and location of the APM stations. Technical criteria utilized by LAWA to assess the alternatives included safety and security, constructability, roadway operations, airside/terminal operations, APM operations, pedestrian access, and phasing. Ultimately, the APM system must accommodate approximately 5,800 passengers with luggage during the peak hours per direction, avoid significant impact to existing airport operations, and must be able to be implemented in an expedited fashion. After careful consideration of the alternatives evaluation performed by LAWA staff, the BOAC selected a spine alignment with six APM stations (three stations within the CTA and three stations outside of the CTA), as the best alternative that met LAWA's project objectives.

Figure 2-5 shows the preferred alignment for the APM through the CTA, including the three proposed stations within the CTA 1) a West CTA Station generally located between Terminals 3 and 4, east of TBIT; 2) a Center CTA Station generally located between Terminal 2 and Terminals 5 and 6, north of the existing (1996) Airport Traffic Control Tower (ATCT) and Center Way; and 3) an East CTA Station generally located between Terminals 1 and 7. To the extent possible, the APM stations were situated between the north and south terminals to provide equivalent travel distances for APM passengers. Moving walkways would be provided within the pedestrian walkways, where appropriate, to assist passengers in moving between the passenger terminals and APM stations.

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12 MapLAX, *Los Angeles International Airport, Landside Access Modernization Program, Program Brief*, January 2016.

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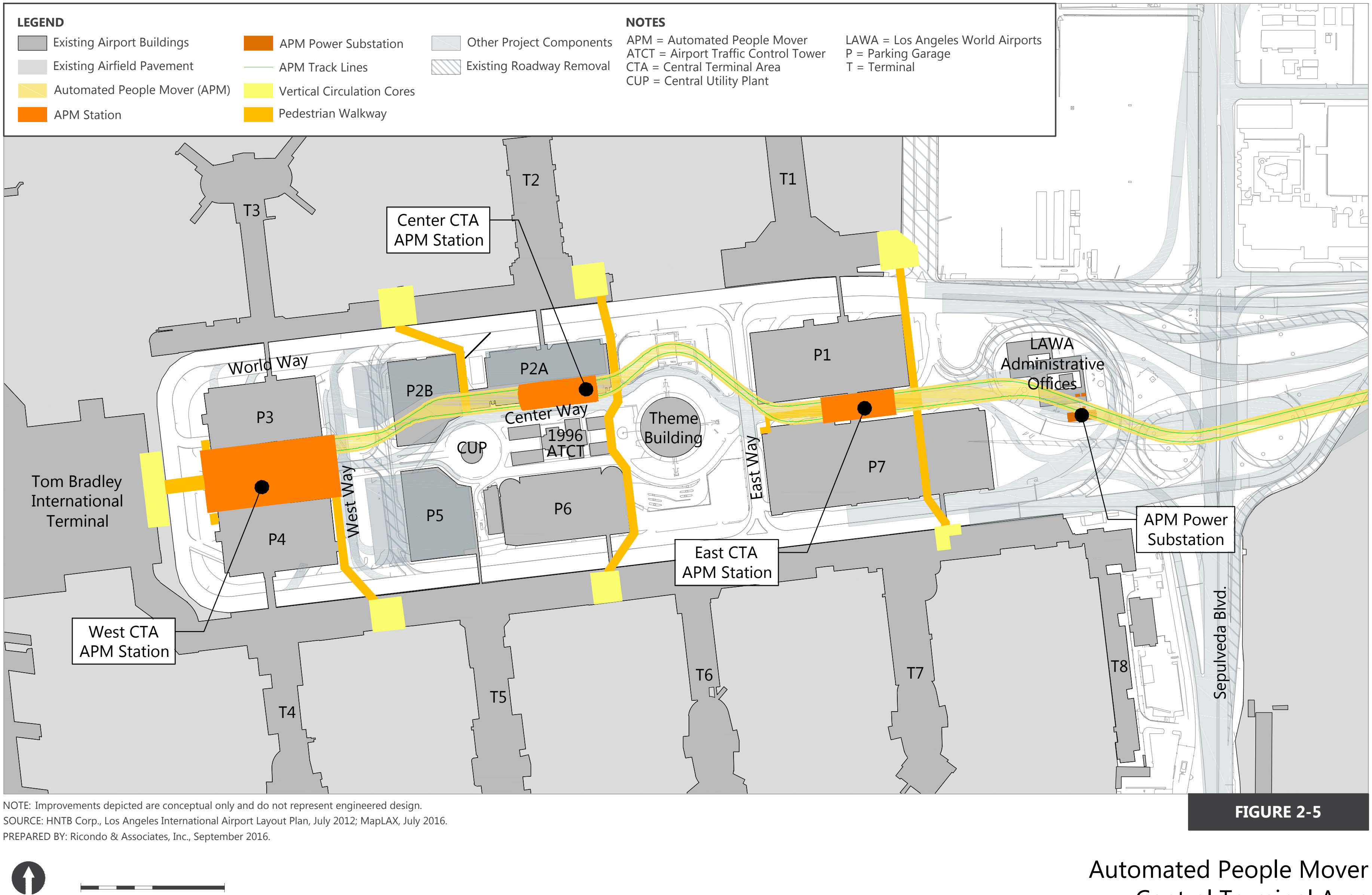

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-5

Automated People Mover
Central Terminal Area

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LAWA proposes three additional stations to serve the new ground transportation facilities outside the CTA, as shown in **Figures 2-6** and **2-7**: 1) an ITF West Station; 2) an ITF East Station; and 3) a CONRAC Station. The station at the ITF East would provide a connection to the Metro rail and bus transit systems at the proposed Metro AMC 96th Street Transit Station, an adjacent multi-modal/transit facility Metro proposes to construct at W. 96th Street/Aviation Boulevard. This Metro facility is a separate and independent project that would be reviewed, and if approved, constructed, and operated by Metro.[13]

2.4.1.1 APM Operating System

The APM operating system consists of an integration of various subsystems (vehicles, automated train control, power distribution, guidance, propulsion, etc.) to create a fully functional, automated, and driverless system. The main components of the operating system include the APM cars, the power distribution system, the automated train control system, communication facilities, and other miscellaneous equipment necessary for the proper operation and maintenance of the system.

The APM operating system components have been evaluated and sized based on the projected future peak demand. APM ridership projections were prepared by LAWA staff based on existing and future mode share assumptions (see Table 4.12.1-1, and Tables 4.12.1-8 through 4.12.1-11) and future passenger volumes.[14] **Figure 2-8** shows the projected APM ridership inbound and outbound from the CTA. As shown, the projected peak demand would be approximately 5,800 people per hour outbound from the CTA occurring between 10:00 a.m. and 11:00 a.m.

For the purposes of environmental analysis, LAWA staff developed potential train system characteristics based on recently deployed systems at U.S. airports. The projected train length required to accommodate the projected peak demand is estimated to be up to 185 feet long, which may vary between different train technologies or suppliers. Additional information regarding APM cars and trains is as follows:

- **APM Cars:** Approximately 42 feet long by 9 feet wide by 12 feet tall.
- **Trains:** Trains would be comprised of up to 5 cars.
- **Capacity per car:** Each car would be able to accommodate approximately 50 passengers, including their luggage.

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13 Los Angeles County Metropolitan Transportation Authority (Metro), *Airport Metro Connector 96th Street Transit Station, Draft Environmental Impact Report*, June 2016.

14 MapLAX, *Los Angeles International Airport, Landside Access Modernization Program, Program Brief*, January 2016.

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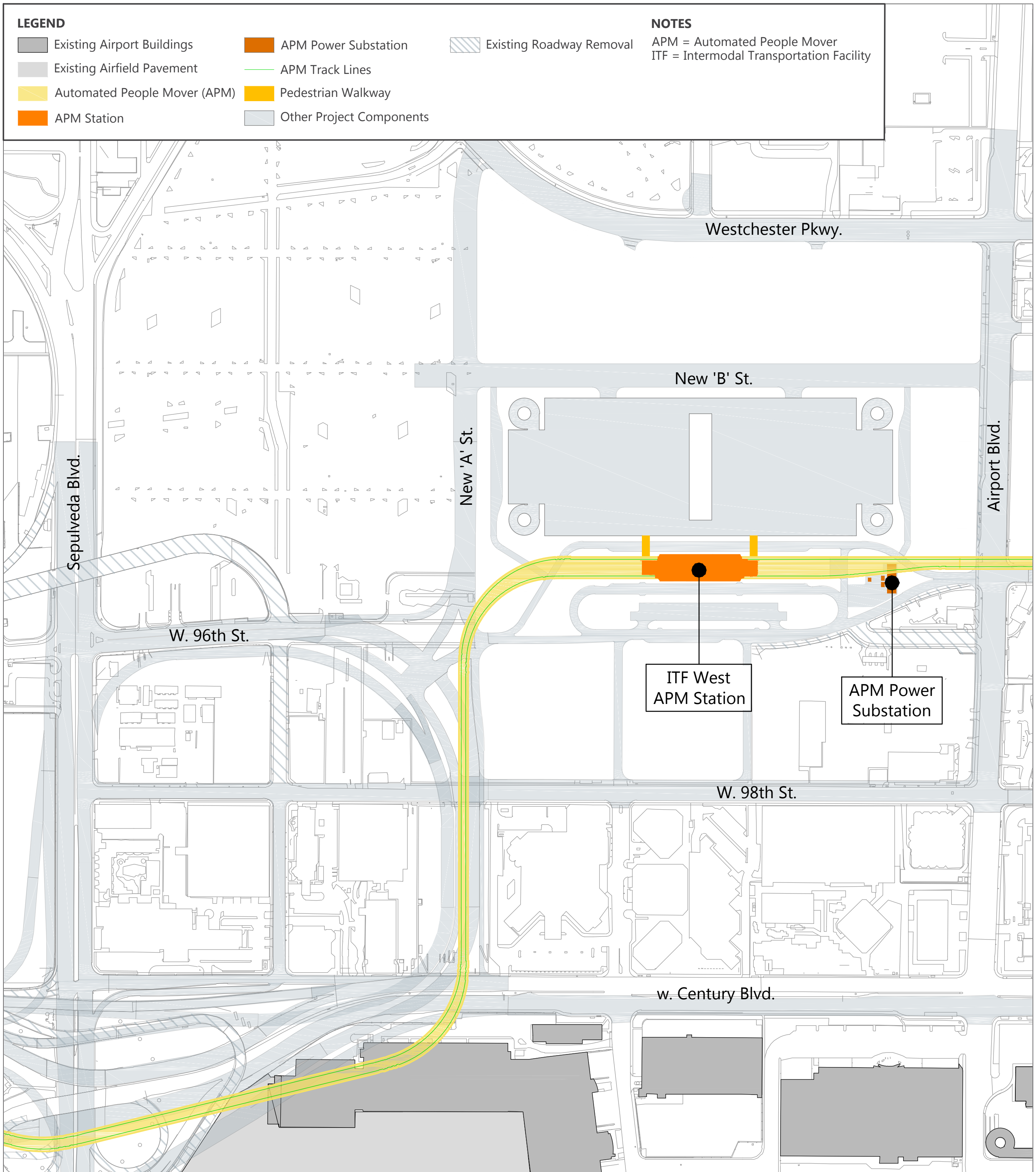

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-6

Automated People Mover
Sepulveda Blvd. to Airport Blvd.

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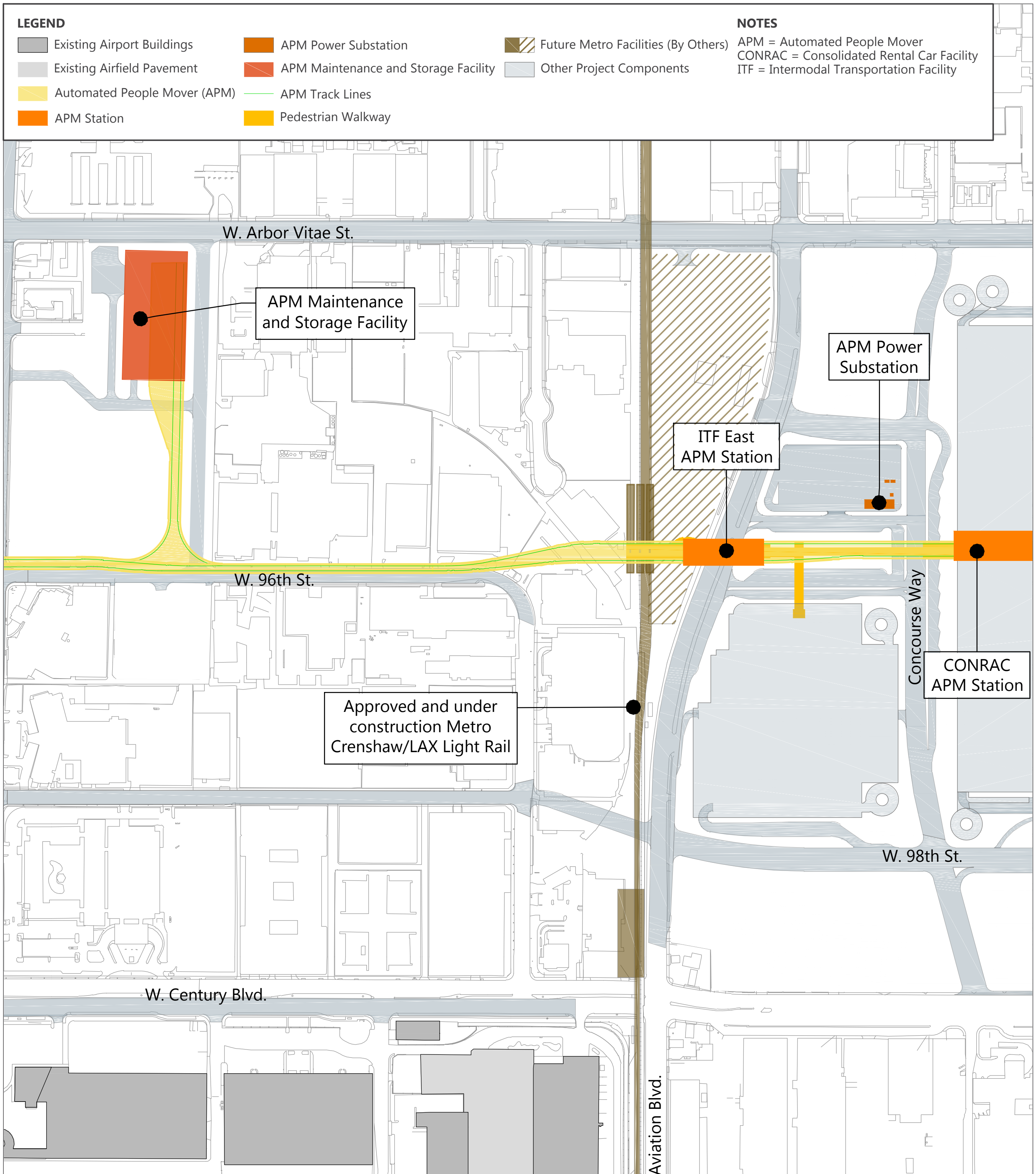

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 500 ft.

FIGURE 2-7

Automated People Mover
Airport Blvd. to Concourse Way

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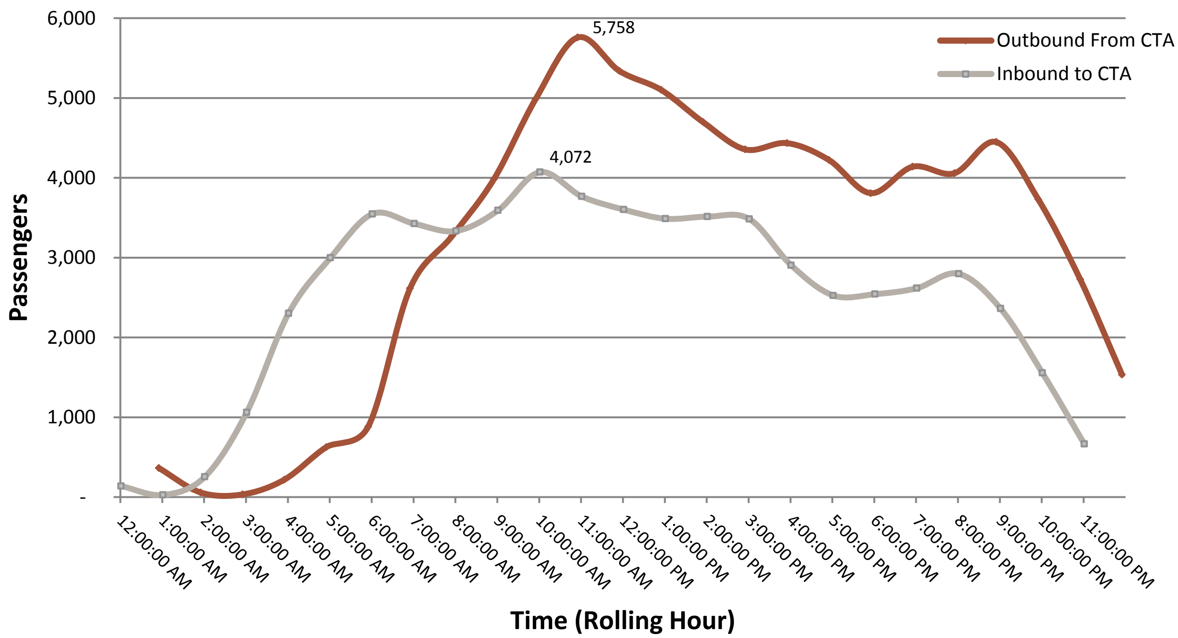
Figure 2-8: APM Ridership Forecast



SOURCE: City of Los Angeles, Los Angeles World Airports, *Normal System Operations and Performance Analysis*, prepared by Lea + Elliott, February 15, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

The APM system would operate in a "pinched loop" cycle: multiple trains would follow each other, with trains utilizing switches at each end of the guideway to use the opposite lane for the return trip. The APM train would operate:

- During peak periods of operation, operating headway intervals (time between trains at a given station) of approximately 2 minutes.
- Total travel time from one end of the APM system to the other (e.g., the CONRAC to the West CTA APM Station) would be approximately 9-10 minutes. **Table 2-2** shows in-vehicle travel times between stations.
- Top cruising speed would be approximately 45 miles per hour (mph).

Table 2-2: Forecast Westbound Station-to-Station In-Vehicle APM Travel Times (mins) 1/

STATIONS	CONRAC	ITF EAST	ITF WEST	CTA EAST	CTA CENTER	CTA WEST
CONRAC	N/A	1.4	3.3	6.1	7.5	9.1
ITF East	N/A	N/A	1.9	4.7	6.1	7.7
ITF West	N/A	N/A	N/A	2.8	4.2	5.8
CTA East	N/A	N/A	N/A	N/A	1.4	3.0
CTA Center	N/A	N/A	N/A	N/A	N/A	1.6
CTA West	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:

N/A = not applicable

1/ The station-to-station travel time includes APM car dwell at station, but does not include up to two minute wait times at the platform.

SOURCE: MapLAX, *Technical Memorandum, Walk Times + Distances from APM CTA Stations to Terminal Vertical Cores*, August 29, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

All trains would be electrically propelled. Power would be supplied to the trains through power rails that would run within the guideway. At least three power distribution substations would be constructed to provide power to the APM, as further discussed in Section 2.4.1.2.4.

2.4.1.2 APM and Associated Facilities

The APM and associated facilities would consist of buildings, structures, or infrastructure that support the APM operating system, including the guideway, passenger stations, pedestrian walkways, vertical circulation cores, the APM MSF, and Traction Power Substations (TPSSs). Each of these components is described in more detail below.

2.4.1.2.1 Guideway

The APM guideway would be approximately 2.25 miles in length. The dedicated guideway would be grade-separated with an elevation varying between approximately 70 feet above grade within the CTA, to approximately 50 feet above grade near the ITF East and CONRAC. The width of the guideway would vary between approximately 46 feet wide to approximately 75 feet wide. Along most of the guideway length, the dual tracks would run parallel and be closely spaced (approximately 46 feet in width). However, near the stations, the guideway would split so that trains could arrive and depart on either side of the station. At the point where the guideway enters and exits the APM stations, the guideway would be approximately 75 feet in width.

The typical guideway segment would be supported by circular or oblong columns approximately 8 feet wide that would span from the CTA to the CONRAC, approximately 100 feet apart. Additional support is necessary beneath the proposed APM stations, consisting of 6-foot wide circular columns approximately 50 feet apart. Column spacing may vary along different sections of the APM guideway alignment depending on spans required to cross streets, avoid utilities or other structures, or minimize visual effects. Columns would be constructed using typical common deep pile foundation systems, including cast-in-drilled-hole (CIDH) piles.[15] Details of the APM guideway include:

- The horizontal element of the APM guideway structure could be a cast-in-place (CIP), precast concrete girder or similar system that would vary in width along the length of the guideway. Based upon preliminary engineering analysis and similar designs elsewhere, the depth of the horizontal structure would be approximately 6 feet based on a maximum nominal span of 120 feet. If spans exceed 120 feet, a deeper girder section or a special design may be required.
- The vertical supports of the APM guideway structure outside of the stations could consist of 8-foot circular (in CTA area) or approximately 5′ x 8′ oblong (outside of CTA area) concrete columns. If constructed using CIDH piles, the columns would be founded on 10-foot diameter concrete shaft foundations. In this case, based on preliminary engineering, the CIDH piles would be approximately 100 feet deep.
- Preliminary engineering has indicated the vertical supports for the APM guideway structure at the stations could consist of 6-foot circular concrete columns. Again, if constructed using CIDH piles, the columns would be founded on 8-foot diameter concrete shaft foundations. Based on preliminary engineering, the 6-foot diameter columns CIDH piles would be approximately 80 feet deep.

Figure 2-9 illustrates typical section views of the guideway and support columns.

The dual-lane guideway would be equipped with switching locations to support the pinched loop system operation. Walkways would be provided on the guideway between the tracks of the APM to support emergency evacuation of passengers and maintenance personnel access.

2.4.1.2.2 Stations, Pedestrian Walkways, and Vertical Circulation Cores

Six stations would provide access to the APM: three within the CTA and three east of the CTA. Of the three stations located east of the CTA, two stations would serve the ITFs and associated ground transportation elements, and one station would serve the CONRAC; these APM stations are discussed with their associated facility (Section 2.4.2 for the ITFs and Section 2.4.3 for the CONRAC).

The proposed CTA APM stations would be designed to include features such as escalators and elevators, passenger waiting areas, signage, and equipment rooms. Two of the three CTA APM stations are primarily planned as waypoints to facilitate the transfer of passengers to and from the terminals and the APM. The endpoint of the APM system, the West CTA APM station, would have a larger station that could include passenger processing facilities. Each of the CTA APM stations would connect to pedestrian walkways providing access between the APM station and passenger terminals; such walkways would vary according to APM station location.

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15 Generally, CIDH piles involve drilling, removal of soils, and construction of a cast-in-place concrete pile within the open borehole.

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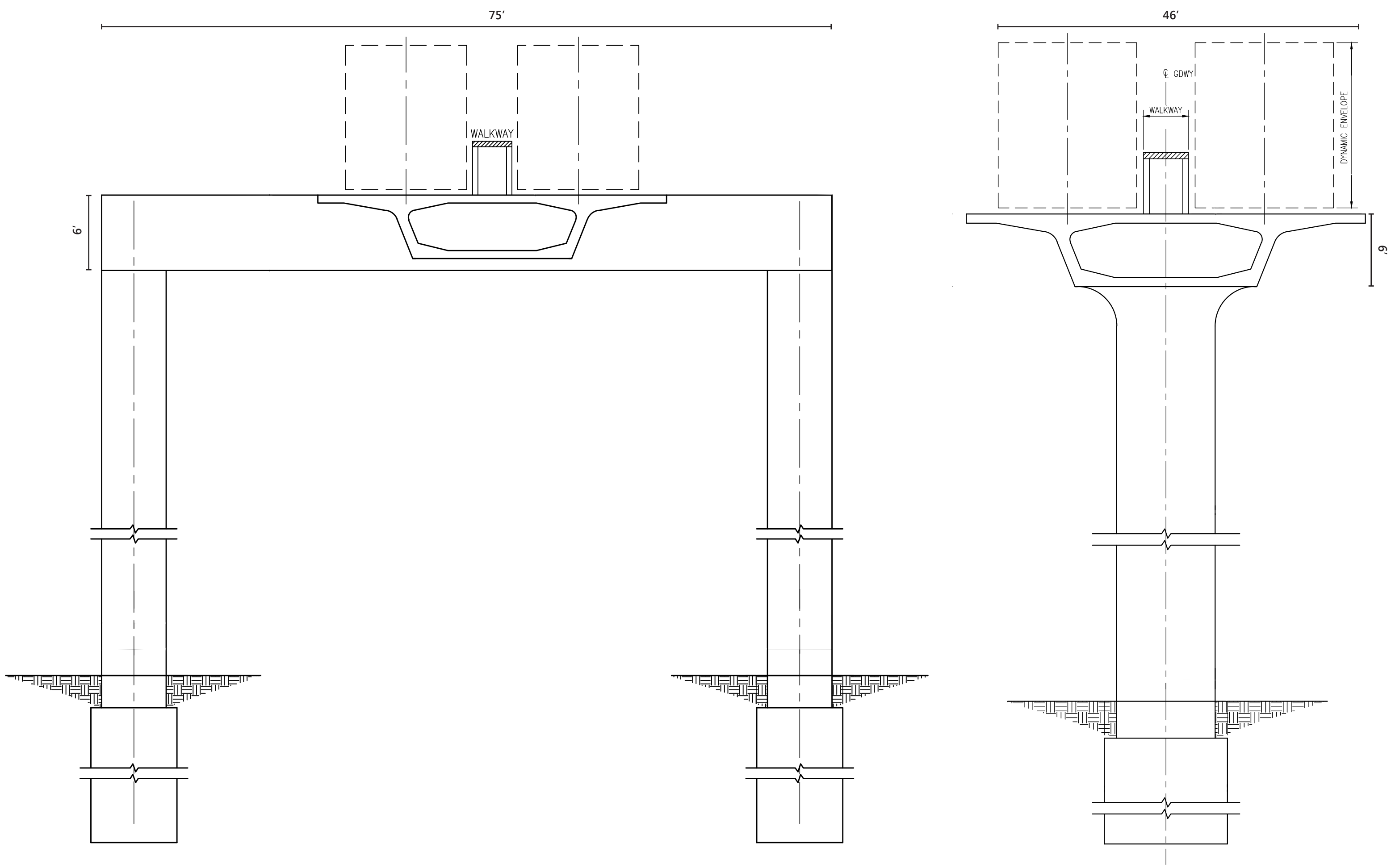

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-9

Typical APM Guideway and Column Section

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The locations of the proposed pedestrian walkways are approximate, and are subject to change to provide appropriate access to the terminals or parking garages. **Figure 2-10** reflects a conceptual view of a typical passenger walkway.

Vertical circulation cores would be provided to convey passengers between the walkway levels and various levels within passenger terminals, parking structures, or APM stations. Departing passengers (arriving on the APM train) would circulate down from the APM platform level to the pedestrian bridge level, which links the stations to the terminals and garages. The pedestrian bridges would cross over the departures level roadway (World Way) and connect with the terminals via vertical circulation cores. These vertical circulation cores would extend above the roofline of the existing terminals by approximately 20 feet in height.

LAWA prepared a design-capacity analysis to determine the number of peak hour passengers that would utilize each terminal vertical circulation core.[16] Based on this analysis, each vertical circulation core would be sized to accommodate up to 8 elevators, 2 stairways, and 4 up-down escalators. **Figure 2-11** illustrates conceptual floor plans and section views of a typical terminal vertical circulation core.

West CTA APM Station

The West CTA APM Station would be located in the western portion of the CTA, between existing Parking Garages P3 and P4. The West CTA APM Station would serve TBIT, existing Parking Garages P3, P4, and P5, and Terminal 4 (see **Figure 2-12**). The West CTA APM Station may also include passenger facilities to support TBIT and the future Midfield Satellite Concourse (currently under construction), consisting of ticketing, baggage screening, and baggage handling equipment along with airline and Transportation Security Administration (TSA) support spaces. Up to four levels of parking would be constructed beneath the West CTA APM Station, including: a new entrance/exit plaza on the first floor, up to approximately 470 additional total parking spaces allocated between levels 1 through 4, and curbside drop-off at West Way on Level 3. A conceptual view of the West CTA APM Station is shown on **Figure 2-13**.

The two-story West CTA APM Station would have a footprint of approximately 100,000 sq. ft., with general dimensions of approximately 220 feet in length (north-south) and approximately 470 feet in width (east-west). The West CTA APM Station would have a floor elevation of approximately 50 feet above ground level, and would be at the same approximate height as Level 5 of Parking Garages P3 and P4, and the departures level of TBIT. Separate boarding and de-boarding platforms for the APM would be located on the second floor of the West CTA APM Station at an elevation of approximately 75 feet above ground level. Each platform would measure approximately 30 feet wide and 175 feet long. The roof level of the West CTA APM Station would have an elevation of approximately 120 feet above ground level.

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[16] MapLAX, *Los Angeles International Airport, Landside Access Modernization Program, Program Brief*, January 2016.

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NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-10

Conceptual Passenger Walkway

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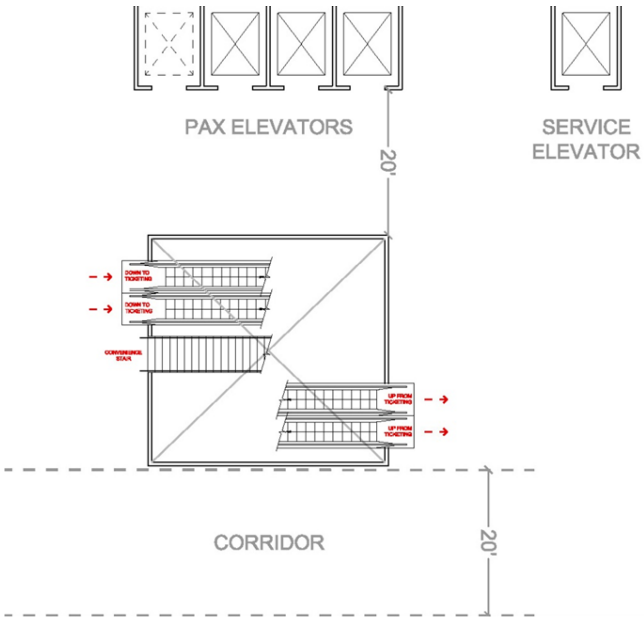
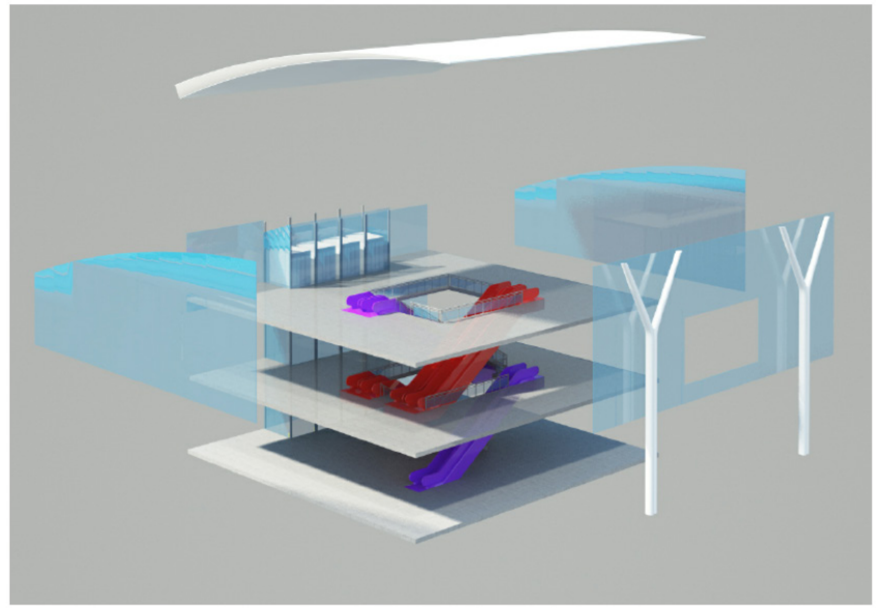


Floor Plan



Conceptual View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-11

Typical Vertical Circulation Core
Floor Plan and Conceptual View

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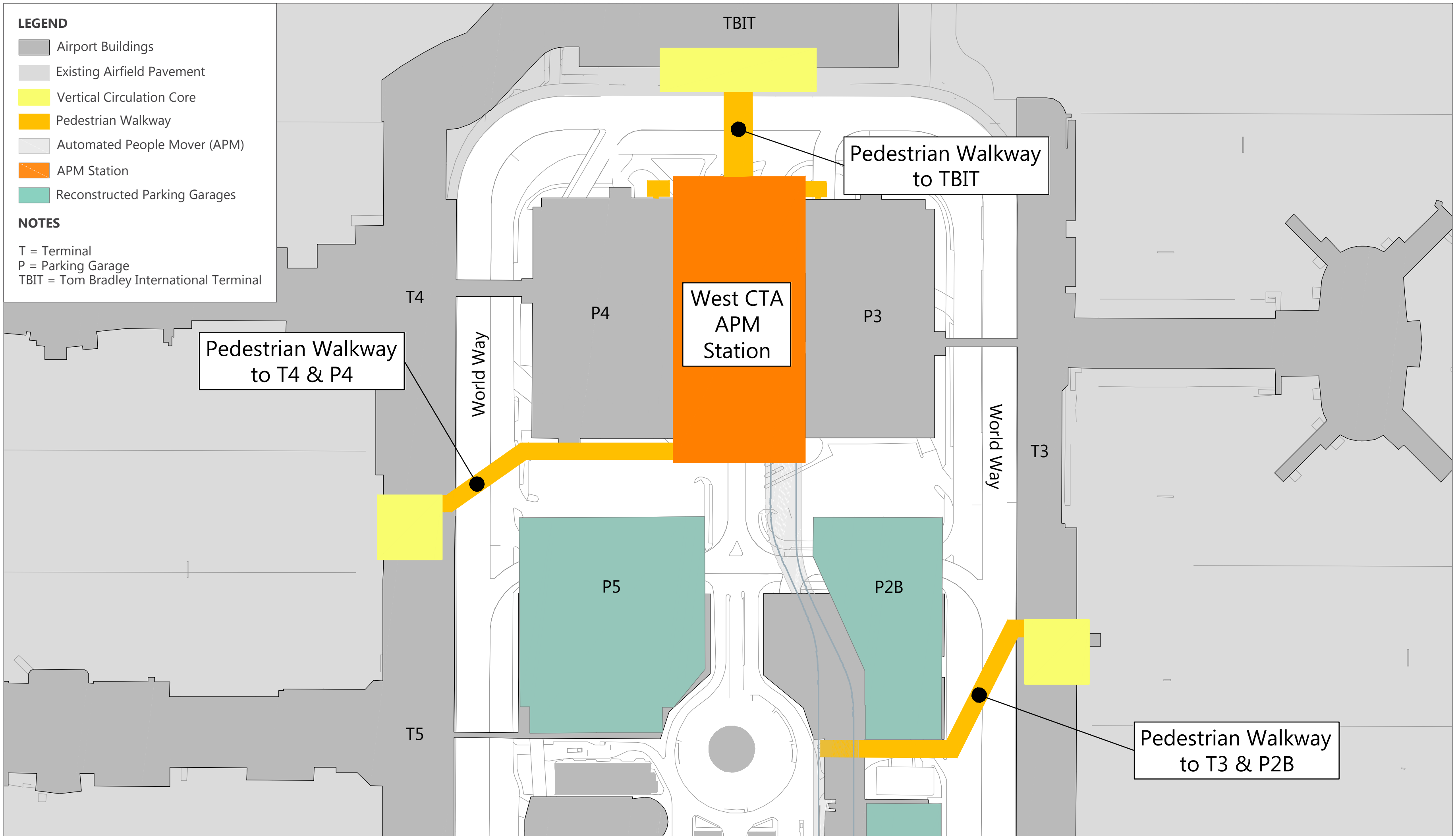

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-12

West CTA APM Station Pedestrian Walkways

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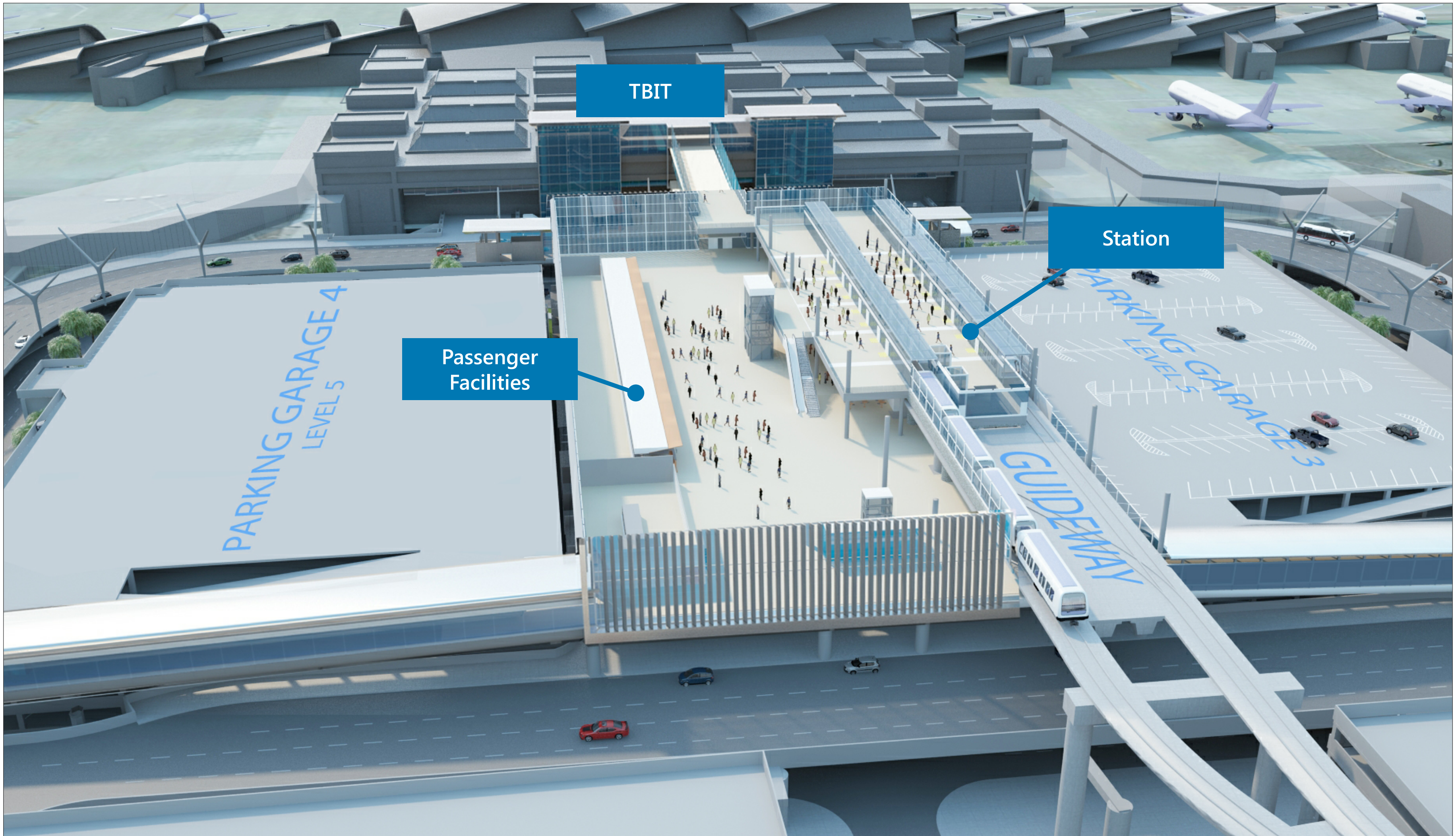

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-13

West CTA APM Station Conceptual View

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On the west end of the platform level, an approximately 30-foot wide pedestrian walkway would connect directly to the APM station and branch off to the south to connect with Parking Garage P4 and to the west to connect with TBIT. On the east end of the station, approximately 25-foot wide pedestrian walkways at approximately 50 feet above grade would branch south to provide access to Terminal 4 and Parking Garages P4 and P5 (see Figure 2-12). All pedestrian walkways would have moving walkways, where appropriate, and vertical circulation cores connecting levels within the parking structures and terminals. The APM system, stations, platforms, and pedestrian walkways would be compliant with the Americans with Disabilities Act (ADA).[17] The Project facilities would be designed to accommodate wheelchairs, and would include announcement systems, dynamic visual signs, and signs with braille to accommodate visually or auditory-impaired individuals. Where appropriate, moving walkways would be provided to assist passengers transiting between the APM stations and passenger terminals.

The passenger walkway to TBIT would be dual-level. Arriving passengers (departing on the APM train) would be directed to vertical circulation cores within TBIT where the passenger walkway would provide access to the platform level of the West CTA APM Station. Departing passengers (arriving on the APM train) would be directed from the platform level to the guest amenities level via elevators and escalators within the West CTA APM Station where the passenger walkway would provide access to the vertical circulation cores within TBIT (see **Figure 2-14**).

The approximate lengths of pedestrian walkways and moving walkways, as well as total walk time, for the West CTA APM Station are provided in **Table 2-3**. The precise locations and lengths of pedestrian and moving walkways are subject to change during the design process.

To accommodate construction of the dual-level passenger walkway from the West CTA APM Station to TBIT, existing garage access driveways and bridges to Parking Garages P3 and P4 would be demolished. The Project includes construction of replacement access from World Way to Parking Garage P3 from the north and to Parking Garage P4 from the south, as well as access along relocated West Way at a passenger pick-up and drop-off curb located at Level 3 between Parking Garages P3 and P4 (see **Figure 2-15**).

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[17] 28 Code of Federal Regulations, Part 36, Americans with Disabilities Act, Title III Regulations, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, as amended by the final rule published on September 15, 2010.

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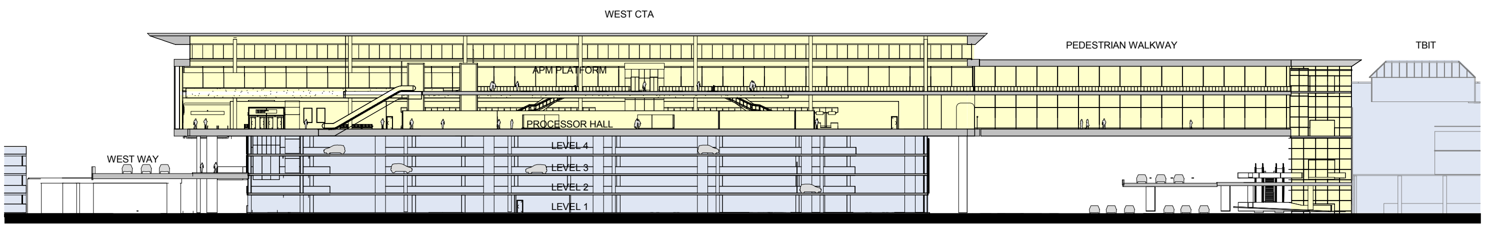
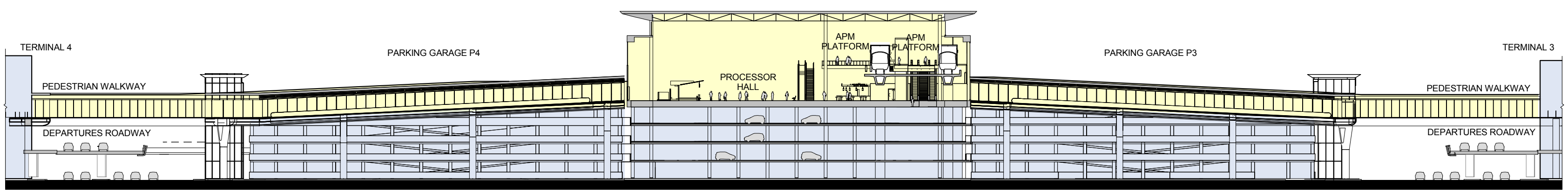


Boarding East to West Section



Boarding North to South Section

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-14

West CTA APM Station
North-South Section Looking West

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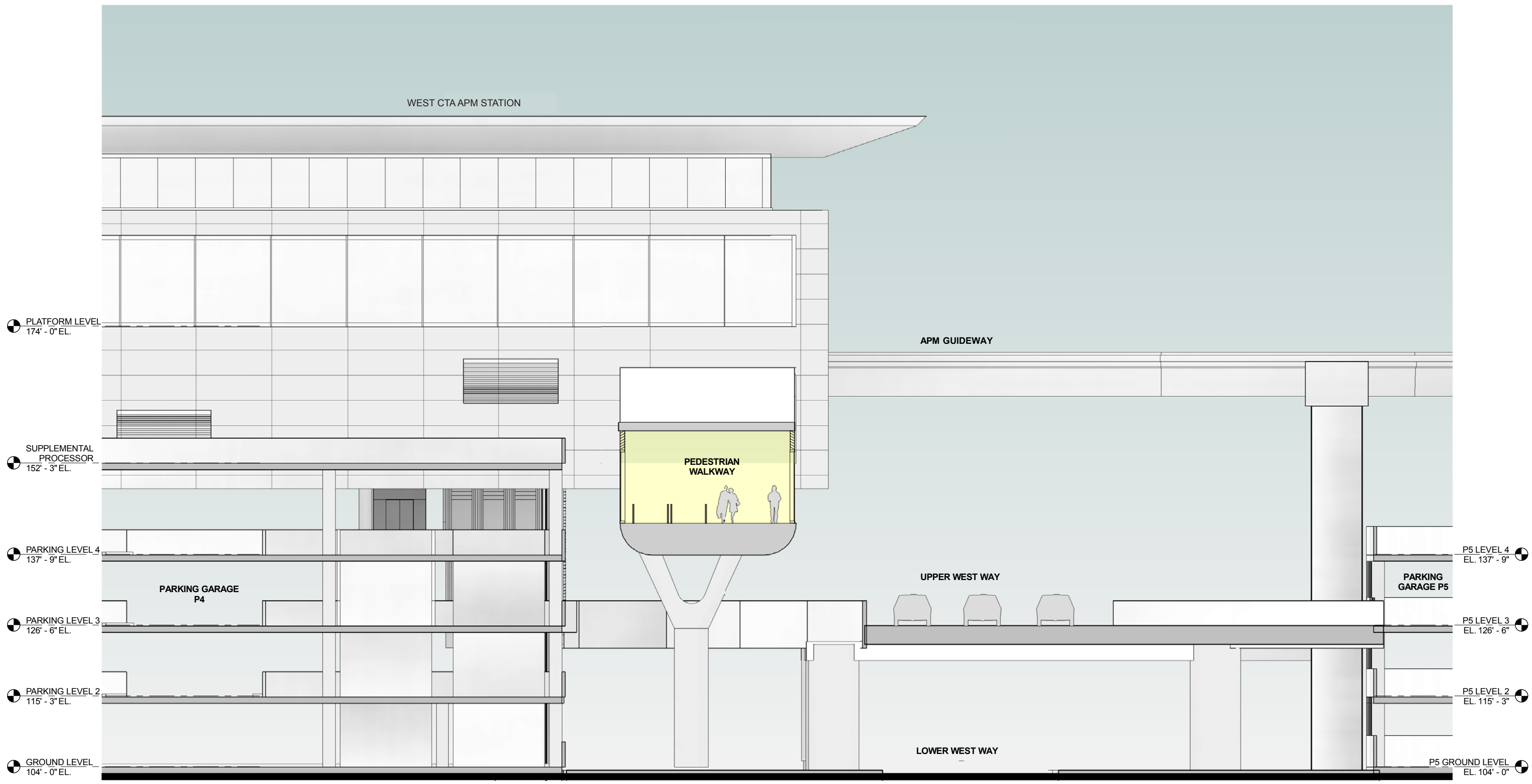

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-15

West CTA APM Station
West Way Interface Section – Looking North Adjacent to P4

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Table 2-3: West CTA APM Station Passenger Walkway Details

APM STATION	TERMINAL CONNECTION	ASSISTED WALK DISTANCE (FT.)	UNASSISTED WALK DISTANCE (FT.)	TOTAL WALK DISTANCE (FT.)	TOTAL WALK TIME (MIN) 1/
West CTA Station	Tom Bradley International Terminal	0	480	480	2.9
West CTA Station	Terminal 4	180	690	870	4.3

NOTE:

1/ Using the lengths of moving walkways and lengths of unassisted paths between the station and terminal vertical circulation cores, the total time to walk from the station to each vertical circulation core was calculated. Calculations were based on a moving walkway speed of 366.7 feet per minute, an unassisted walk speed of 246.7 feet per minute, and 1-minute per vertical transfer.

SOURCE: MapLAX, *Technical Memorandum, Walk Times + Distances from APM CTA Stations to Terminal Vertical Cores*, August 29, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Center CTA APM Station

The Center CTA APM Station would be located north of the ATCT in the area currently occupied by the southern half of Parking Garage P2A. As further discussed in Section 2.5, Parking Garages P2A and P2B would be demolished and reconfigured to allow for the construction of the Center CTA APM Station and APM guideway. The two-story facility would have a footprint of approximately 10,000 sq. ft., with general dimensions of 45 feet in width (north-south) and approximately 200 feet in length (east-west). The Center CTA APM Station would be located between the APM tracks, allowing for boarding and de-boarding on the same platform. The APM platform would have an elevation of approximately 75 feet above ground level; the pedestrian walkway level would be located below the platform, at an elevation of approximately 40 feet above ground level. The roof level of the Center CTA APM Station would have an elevation of approximately 100 feet above ground level. **Figure 2-16** illustrates a conceptual floor plan and section views of the Center CTA APM Station.

Approximately 25-foot-wide single-level pedestrian walkways would connect the Center CTA APM Station to Terminals 2, 5, and 6. Ten-foot wide pedestrian walkways to Parking Garages P2A and P6 would branch off from these walkways. Three moving walkways, one north of the Center CTA APM Station, and two south of the Center APM CTA Station would be located within the pedestrian walkways. The pedestrian walkways would bridge above World Way and connect to Terminals 2, 3, 5, and 6 with elevator and escalator access to both the arrivals and departures levels. **Figure 2-17** illustrates a plan view of the Center CTA APM Station passenger walkways and their connection to Terminals T2, T3, T5, and T6 and Parking Garages P2A, P2B, and P6. **Table 2-4** provides details on the approximate lengths of passenger walkways and moving walkways, as well as total walk time, for the Center CTA APM Station. The precise locations and lengths of pedestrian and moving walkways are subject to change during the design process.

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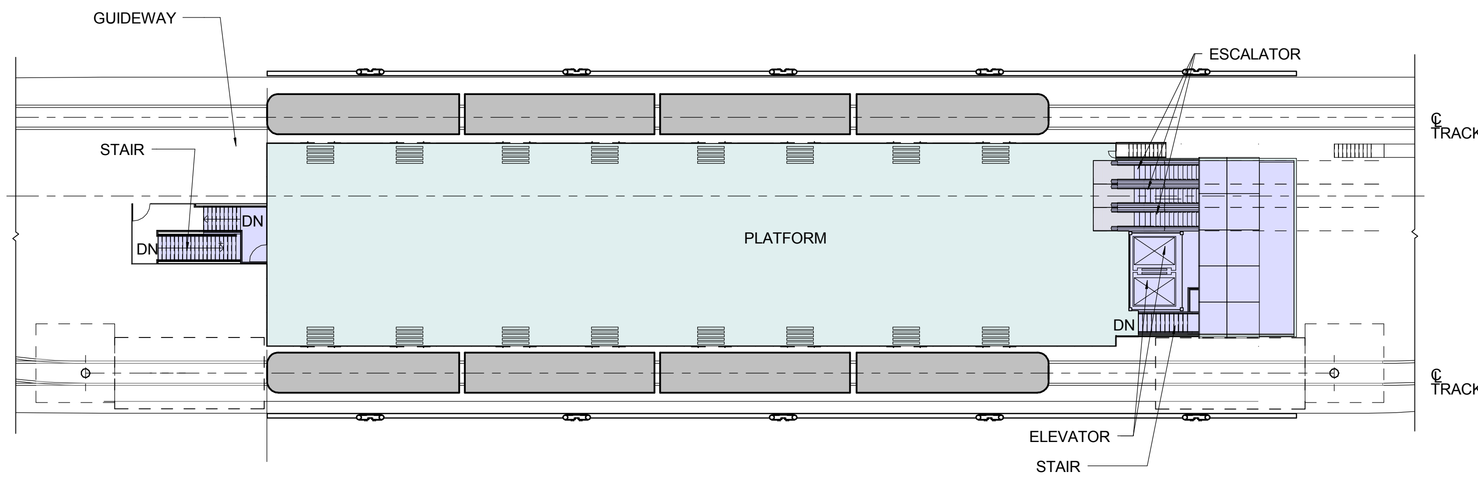
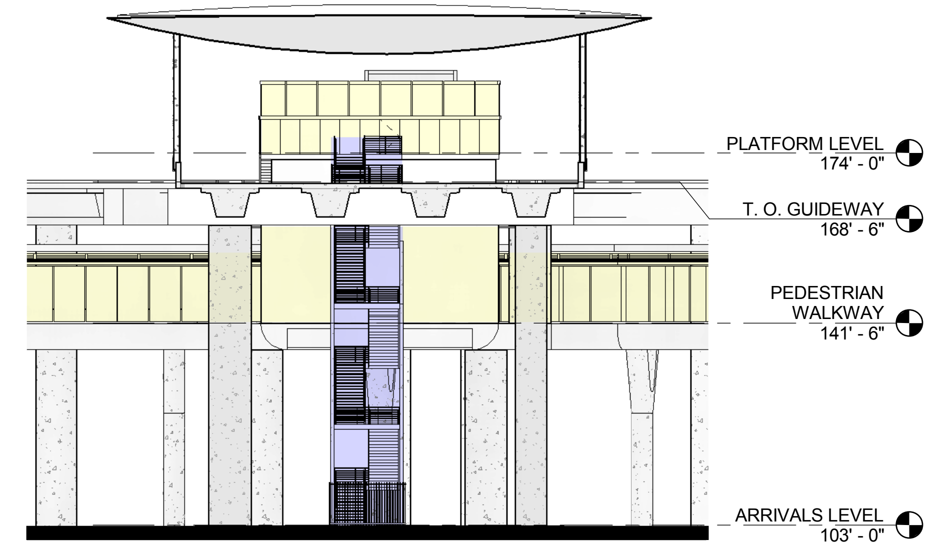
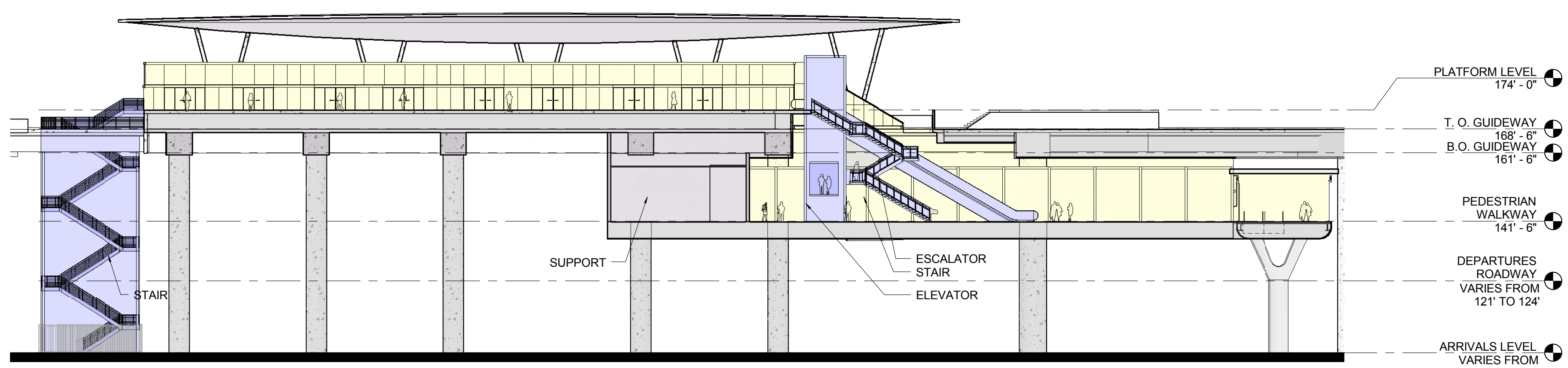


Floor Plan



North-South Section View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-16

Center CTA APM Station
Conceptual Floor Plan and Section Views

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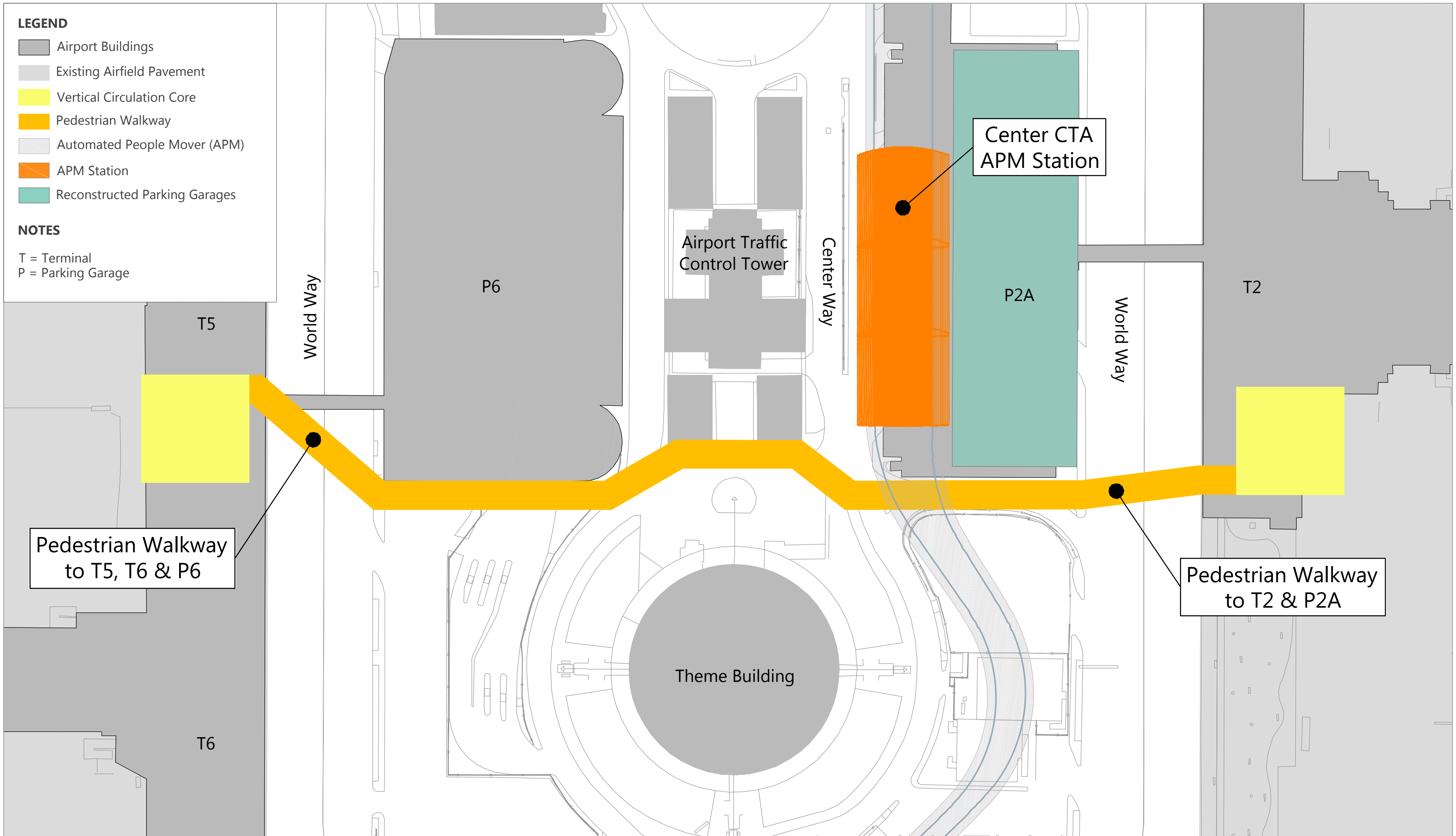

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 150 ft.

FIGURE 2-17

Center CTA APM Station Pedestrian Walkways

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Table 2-4: Center CTA APM Station Passenger Walkway Details

APM STATION	TERMINAL CONNECTION	ASSISTED WALK DISTANCE (FT.)	UNASSISTED WALK DISTANCE (FT.)	TOTAL WALK DISTANCE (FT.)	TOTAL WALK TIME (MIN) 1/
Center CTA Station	Terminal 2	100	505	605	3.3
Center CTA Station	Terminal 2/3	110	680	790	4.1
Center CTA Station	Terminal 5/6	250	700	950	4.5

NOTE:

1/ Using the lengths of moving walkways and lengths of unassisted paths between the station and terminal vertical circulation cores, the total time to walk from the station to each vertical circulation core was calculated. Calculations were based on a moving walkway speed of 366.7 feet per minute, an unassisted walk speed of 246.7 feet per minute, and 1-minute per vertical transfer.

SOURCE: MapLAX, *Technical Memorandum, Walk Times + Distances from APM CTA Stations to Terminal Vertical Cores*, August 29, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

The APM system, stations, platforms, and pedestrian walkways would be compliant with the ADA.[18] The Project facilities would be designed to accommodate wheelchairs, and would include announcement systems, dynamic visual signs, and signs with braille to accommodate visually or auditory-impaired individuals. Where appropriate, moving walkways would be provided to assist passengers transiting between the APM stations and passenger terminals.

East CTA APM Station

The East CTA APM Station would be located between existing Parking Garages P1 and P7. The station would be located between the APM tracks, allowing for boarding and de-boarding on the same platform. The two-story facility would have a footprint of approximately 10,000 sq. ft., with general dimensions of 45 feet in width (north-south) and approximately 200 feet in length (east-west). The APM platform would have an elevation of approximately 75 feet above ground level; the pedestrian walkway level would be located below the platform, at an elevation of approximately 40 feet above ground level. The roof level of the East CTA APM Station would have an elevation of approximately 100 feet above ground level. Conceptual floor plans and section views of the East CTA APM Station are illustrated on **Figure 2-18**. A conceptual view of the East CTA APM Station is shown on **Figure 2-19**.

Approximately 25-foot-wide single-level pedestrian walkways would connect the East CTA APM Station to Terminals 1, 7, and 8, and to Parking Garages P1 and P7. Two moving walkways, one north of the East CTA APM Station, and one south of the East CTA APM Station would be located within the pedestrian walkways. The pedestrian walkways would bridge above World Way and connect to Terminals 1, 7, and 8 with elevator and escalator access to both the arrivals and departures levels. **Figure 2-20** illustrates a plan view of the East CTA APM Station passenger walkways and their connection to Terminals 1 and 7 and Parking Garages P1 and P7.

18 28 CFR Part 36, Americans with Disabilities Act, Title III Regulations, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, as amended by the final rule published on September 15, 2010.

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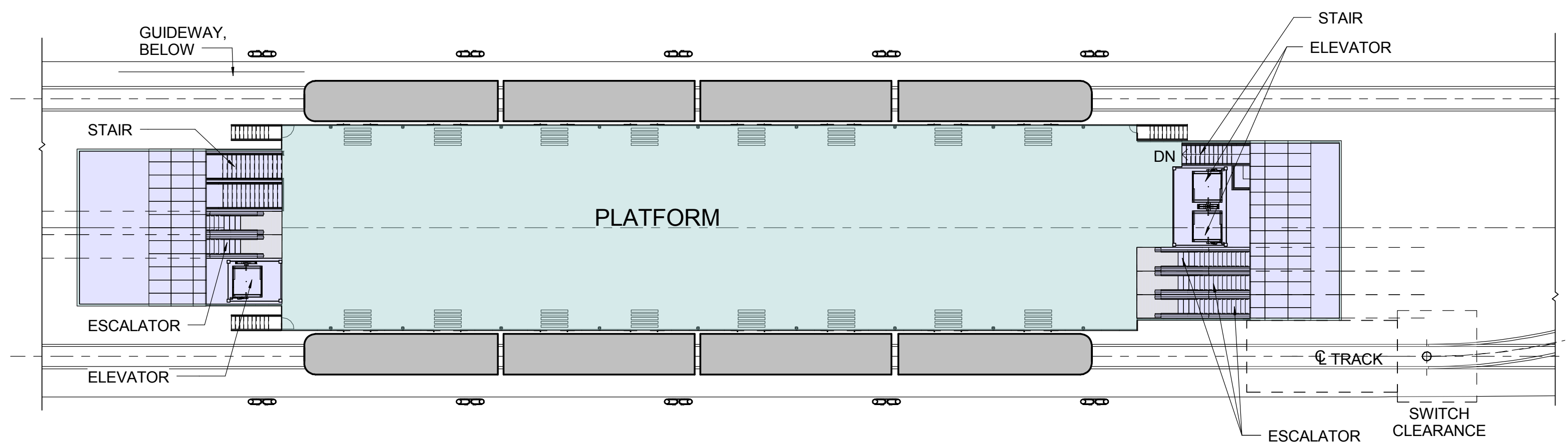
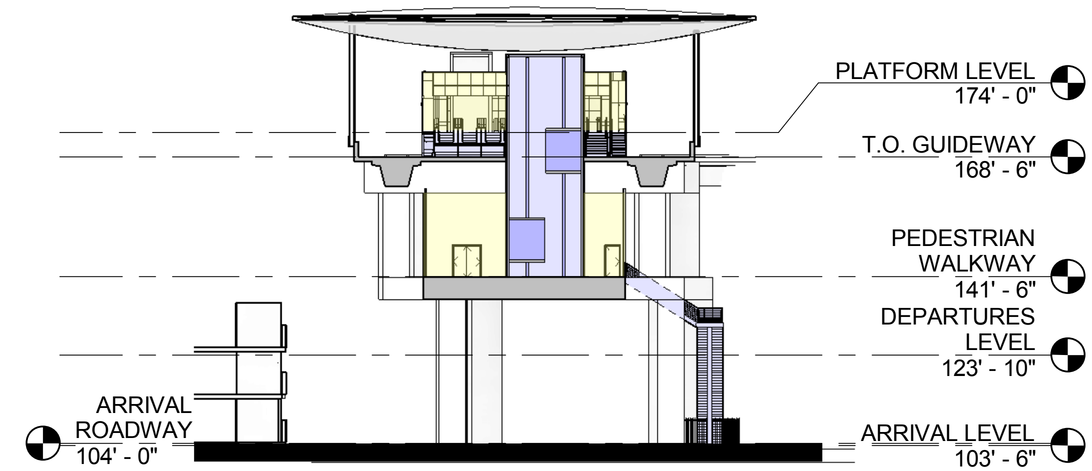
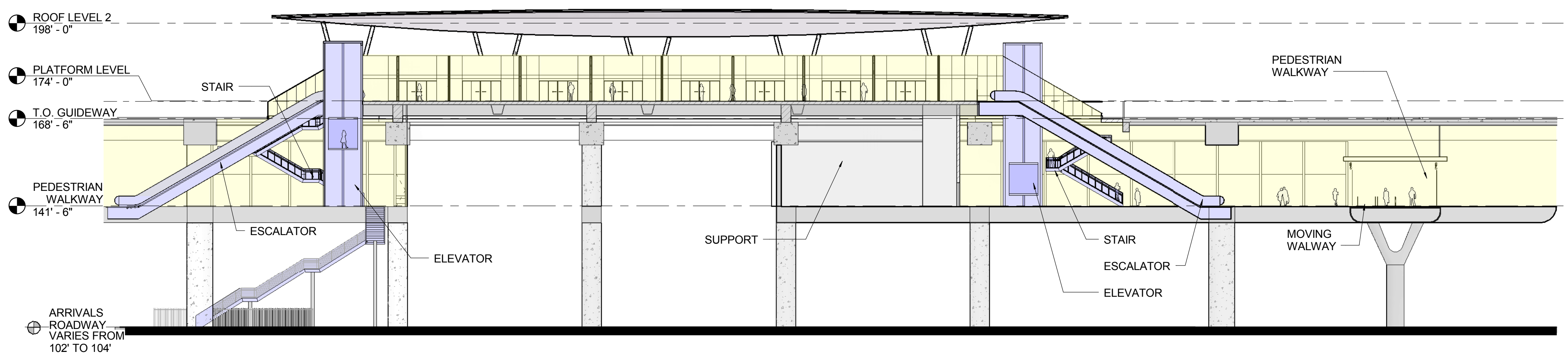


Floor Plan



North-South Section View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: : MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-18

East CTA APM Station
Conceptual Floor Plan and Section Views

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NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: SOM, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-19

East CTA APM Station
Conceptual View

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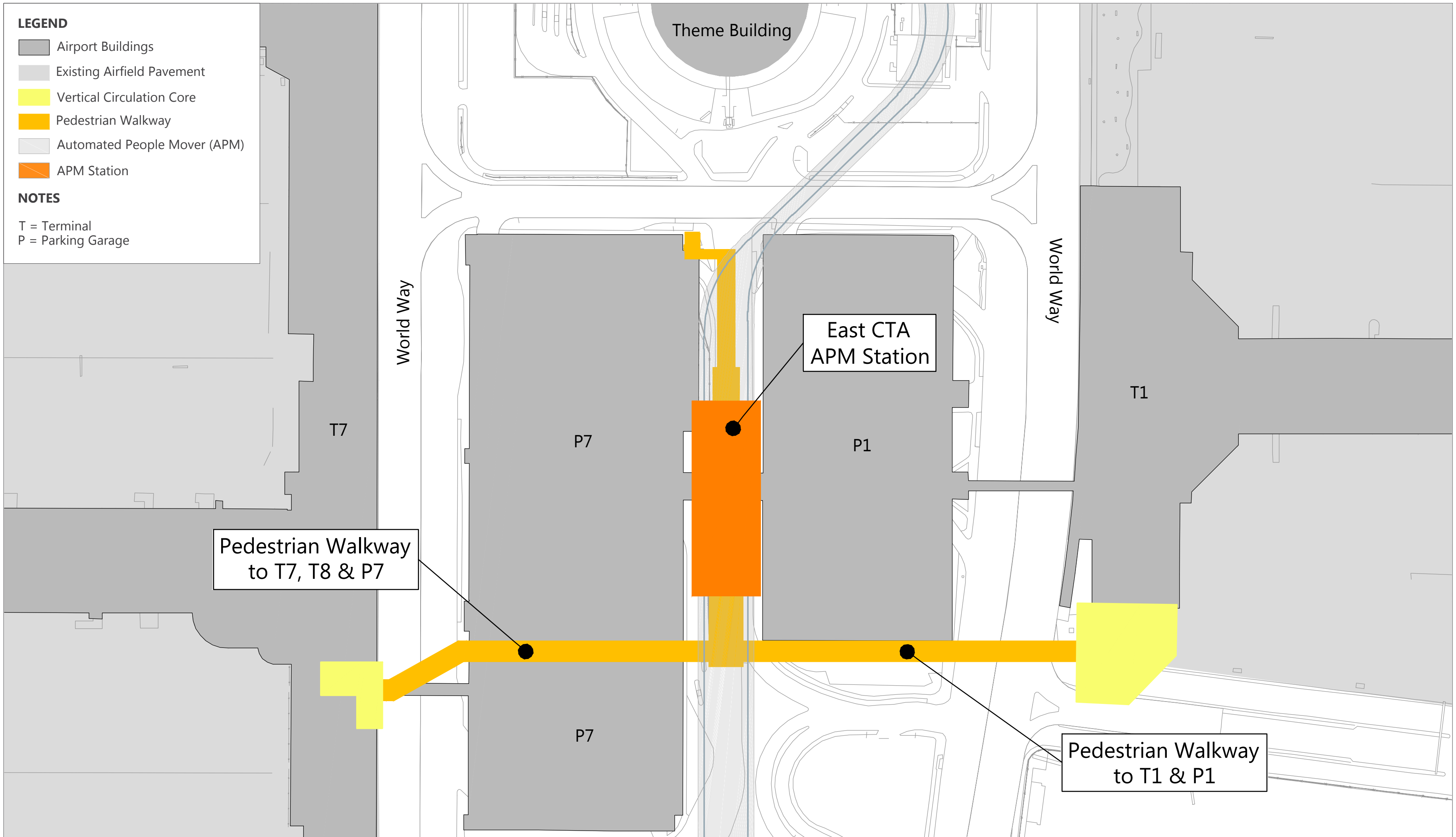

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 200 ft.

FIGURE 2-20

East CTA APM Station Pedestrian Walkways

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Access to the Theme Building would be provided via a pedestrian walkway at the west end of the platform to Parking Garage P7; vertical circulation would then be provided to the street level.

Table 2-5 provides detail on the lengths of passenger walkways and moving walkways, as well as total walk time, for the East CTA APM Station. The precise locations and lengths of pedestrian and moving walkways are subject to change during the design process. The APM system, stations, platforms, and pedestrian walkways would be compliant with the ADA.[19] The Project facilities would be designed to accommodate wheelchairs, and would include announcement systems, dynamic visual signs, and signs with braille to accommodate visually or auditory-impaired individuals. Where appropriate, moving walkways would be provided to assist passengers transiting between the APM stations and passenger terminals.

Table 2-5: East CTA APM Station Passenger Walkway Details

APM STATION	TERMINAL CONNECTION	ASSISTED WALK DISTANCE (FT.)	UNASSISTED WALK DISTANCE (FT.)	TOTAL WALK DISTANCE (FT.)	TOTAL WALK TIME (MIN) 1/
East CTA Station	Terminal 1	220	485	705	3.6
East CTA Station	Terminal 7/8	240	470	710	3.6

NOTE:

1/ Using the lengths of moving walkways and lengths of unassisted paths between the station and terminal vertical circulation cores, the total time to walk from the station to each vertical circulation core was calculated. Calculations were based on a moving walkway speed of 366.7 feet per minute, an unassisted walk speed of 246.7 feet per minute, and 1-minute per vertical transfer.

SOURCE: MapLAX, *Technical Memorandum, Walk Times + Distances from APM CTA Stations to Terminal Vertical Cores*, August 29, 2016.

PREPARED BY: Ricondo & Associates, Inc., February 2016.

2.4.1.2.3 APM Maintenance and Storage Facility

A necessary component of the APM system is a maintenance and storage facility (MSF), where the APM train cars can be cleaned, repaired, and washed; it would also house the operating center of the APM system. LAWA's APM MSF would be constructed east of the ITF West and would have tracks going into the structure matching the height of the APM guideway. The APM MSF would be located on a 15-acre site northeast of the intersection of Airport Boulevard and W. 96th Street, as shown on **Figure 2-21**. Access to the site would be located on the east side of Airport Boulevard, south of Arbor Vitae, and north from W. 96th Street. The main point of access to the facility would be located immediately east of the facility, at a new private street, New 'D' Street, connecting W. Arbor Vitae Street and W. 96th Street.

[19] 28 CFR Part 36, Americans with Disabilities Act, Title III Regulations, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, as amended by the final rule published on September 15, 2010.

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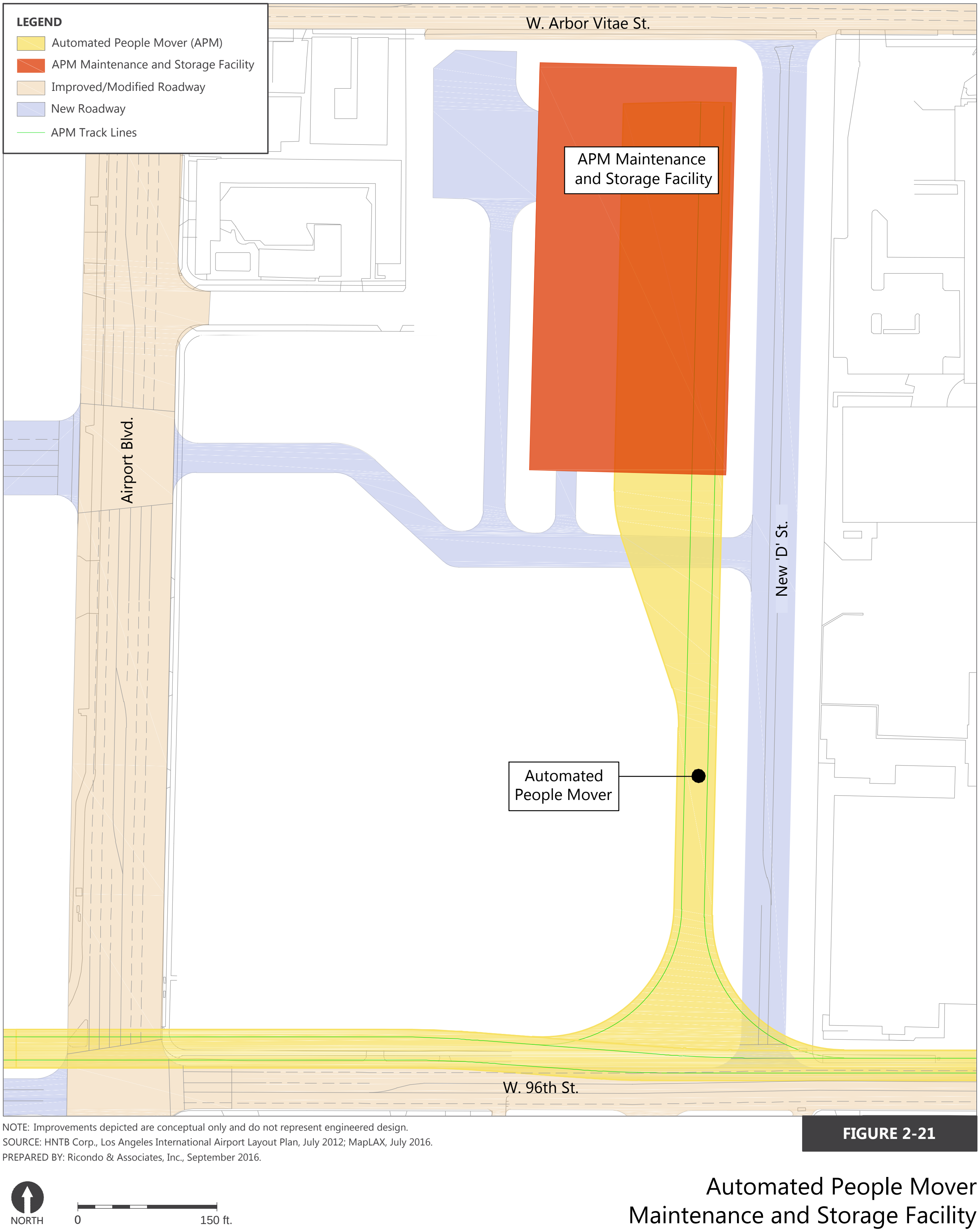

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-21

Automated People Mover Maintenance and Storage Facility

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Controlled access would include automated gates for vehicles and pedestrians. A paved two-way roadway would connect these access points, as well as paved interior circulation for employees, service vehicles, and delivery vehicles. Security measures for the APM MSF building would include perimeter fencing, automated gates, intercoms, electronic security card systems, security cameras, and security personnel.

The APM MSF would cover approximately 7.3 acres and would be sized to accommodate the maintenance of the APM rolling stock and operating system. The majority of the site would consist of the APM lead track, secondary tracks, and switching tracks. The multi-story facility would have a footprint of approximately 95,000 sq. ft., with general dimensions of 440 feet in length (north-south) and approximately 215 feet in width (east-west). The top of the facility would be a maximum of 80 feet above ground level.

As shown in **Figure 2-22**, the APM MSF would include the following three levels:

- **Ground Level:** The ground floor of the facility would be a generally unenclosed space providing approximately 60 employee parking spaces and an approximately 7,500 sq. ft. truck receiving area. An enclosed area on the east side of the facility of approximately 3,900 sq. ft. would consist of a lobby, receiving area, and facility support rooms (mechanical, electrical, and plumbing support services). Access to higher levels of the structure would be provided through the lobby entrance.
- **Maintenance Level:** The maintenance level of the MSF would be located on the second floor, approximately 40 feet above grade to accommodate train ingress and egress. The maintenance level would be split into two separate areas. Approximately 68,300 sq. ft. on the western side of the facility would consist of five APM tracks for vehicle maintenance, vehicle storage, and a vehicle washing station. The height of this area would extend to the roofline, approximately 50 feet in height. The eastern 25,000 sq. ft. of the facility would be comprised of maintenance and repair shop areas, and parts and supply storage. These areas would have a height of approximately 10 feet.
- **Mezzanine**: The MSF mezzanine would be located above the maintenance shops and storage areas on the eastern side of the facility. This approximately 15,600 sq. ft. area would consist of office space, conference rooms, employee locker and break rooms, additional equipment and storage rooms, and a central control room.

The APM MSF would be staffed 24-hours a day and would include a collection system for wastewater and fluids from the train washing system.

2.4.1.2.4 Traction Power Substations

The proposed Project would include the construction of at least three TPSSs to provide power to the APM guideway and trains. A fourth TPSS may be required depending on type of technology used for the operating system; if needed, it would be located adjacent to the MSF. The TPSSs would be approximately 3,000 sq. ft. in size with additional support equipment located adjacent to each building. Typical equipment housed in and around the substations include transformers, rectifiers, cabling, and switchgear. Additionally, each TPSS would have controlled access, security fencing, and various landscaping elements. The TPSSs would be located in the vicinity of the East CTA APM Station, the ITF West, and the ITF East as shown on Figures 2-5 through 2-7, respectively. Further discussion of utilities is provided in Section 2.4.5.

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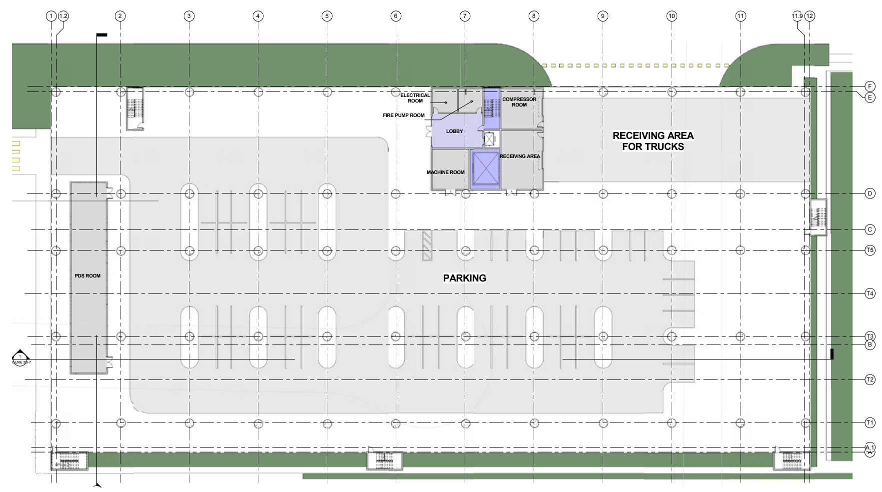
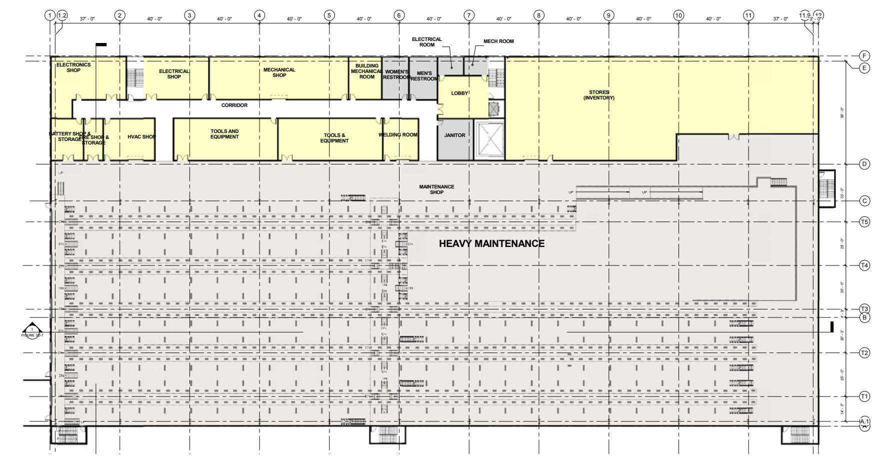
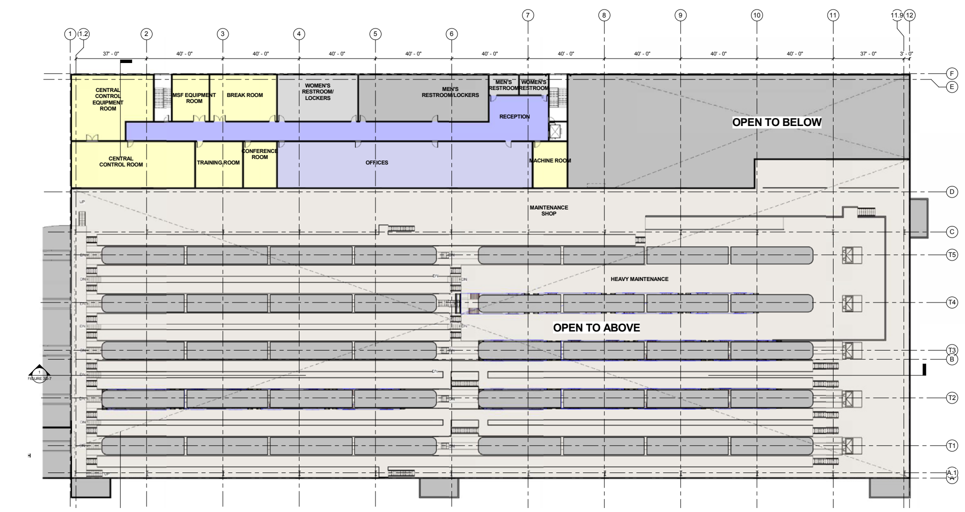


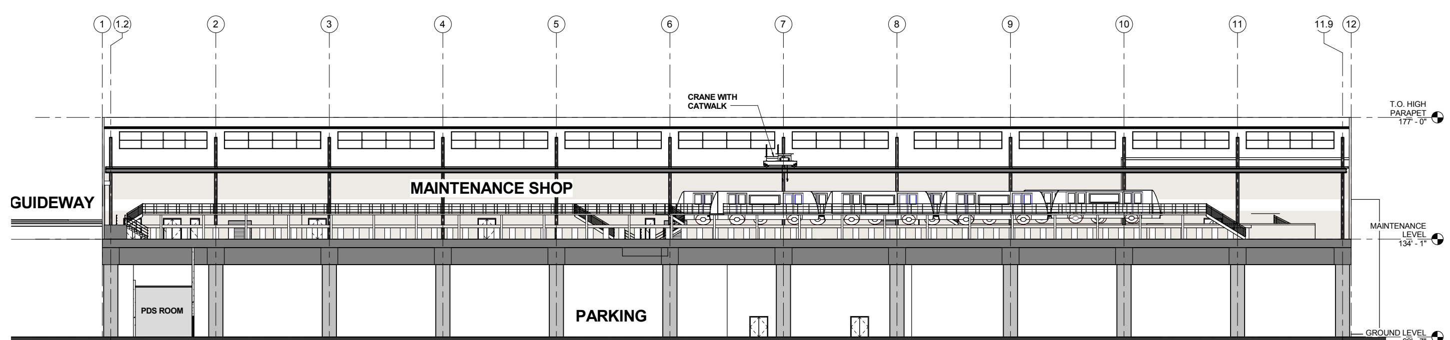
Ground Floor Plan



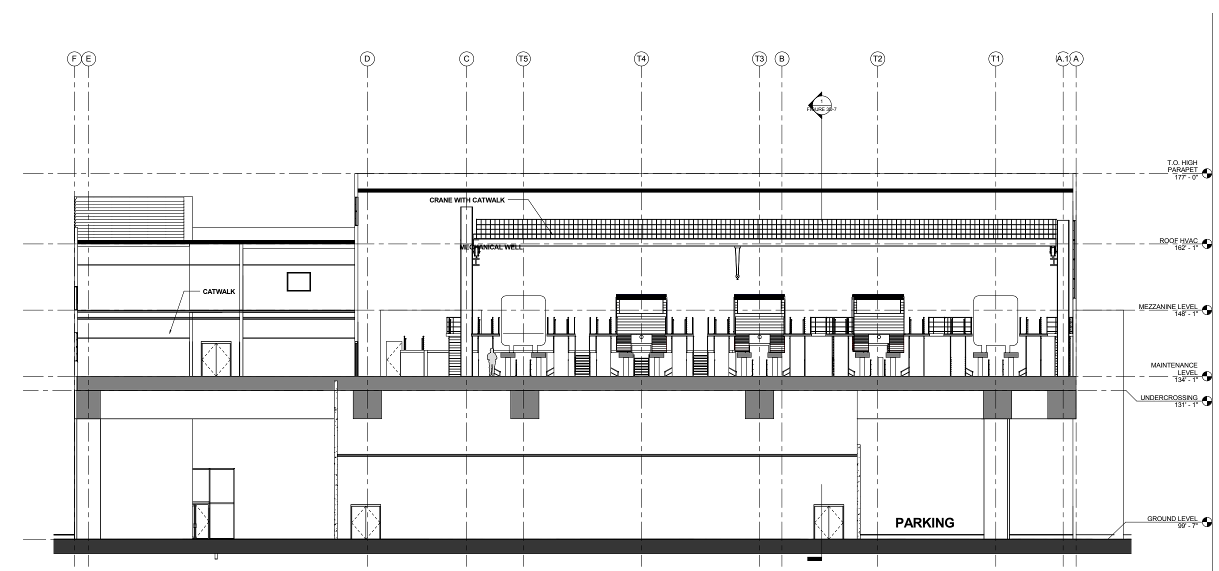
Maintenance Level Floor Plan



Mezzanine Floor Plan



North-South Section View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-22

APM Maintenance and Storage Facility
Conceptual Floor Plans and Section Views

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2.4.2 INTERMODAL TRANSPORTATION FACILITIES

The proposed Project includes two ITFs: an ITF West and an ITF East, as shown on Figure 2-4. These facilities would function as new gateways to LAX, by providing convenient access to the APM system for those traveling to LAX in private or commercial vehicles. By transferring passengers from vehicles to the APM system, these intermodal facilities would reduce the number of vehicles on the CTA roadway system. Section 2.4.6 discusses ground transportation policy changes and pricing differential strategies that LAWA proposes to encourage use of the facilities by both commercial and private vehicles. The ITFs would provide convenient locations outside of the CTA for passenger pick-up and drop-off by private vehicles and commercial shuttles or for passengers and employees to park and take the APM to the CTA, which would reduce traffic on the airport entrance roads and within the CTA. Each facility would be designed to include airport amenities, which may include valet parking, waiting areas, commercial amenities such as dining and concession services, baggage check facilities, and ticketing/information kiosks to make these facilities attractive and convenient alternatives to the CTA. Some of these amenities may be available when the ITFs open, while other amenities such as baggage check-in facilities may not occur until future years and is subject to FAA and TSA approvals.

2.4.2.1 ITF West

The ITF West facility would be located in the area bound by W. 98th Street to the south, Airport Boulevard to the east, Westchester Parkway to the north, and LAX Lot C parking lot to the west (see **Figure 2-23**). Specifically, the ITF West would be located approximately 830 feet north of W. 98th Street, approximately 300 feet west of Airport Boulevard, and approximately 530 feet south of Westchester Parkway. Currently, this 33-acre area contains the LAX Lot C parking lot, the Metro Lot C City Bus Center, Avis Rental Car facilities, a Burger King restaurant, and LAWA-owned parking lots. The main components of the ITF West include an APM station, two new adjacent and interconnected public parking structures (one with four elevated parking decks and one with five elevated parking decks), a commercial vehicle curb, and internal circulation roads (see **Figure 2-24**). **Figure 2-25** shows a conceptual view of the ITF West.

The ITF West would be situated in a location that would allow the capture of Airport traffic that typically utilizes Sepulveda Boulevard and Lincoln Avenue as access roads into the Airport. Public parking would be provided north of the ITF West APM Station in two adjacent and interconnected parking structures. Pick-up and drop-off curbs for private vehicles would be located on the north side of the ITF West APM Station. A commercial vehicle rotary would be located south of the ITF West APM Station and designed to serve hotel shuttles, off-airport parking shuttles, charter vans, transit buses, and other commercial modes. Areas for short-term parking and staging of shuttles would also be provided in this area. Additional details on each of the main components of the ITF West are provided below.

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SOURCE: Los Angeles World Airports, August 2014 (aerial photography - for visual reference only, may not be to scale; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-23

Intermodal Transportation Facility West Area
Existing Conditions

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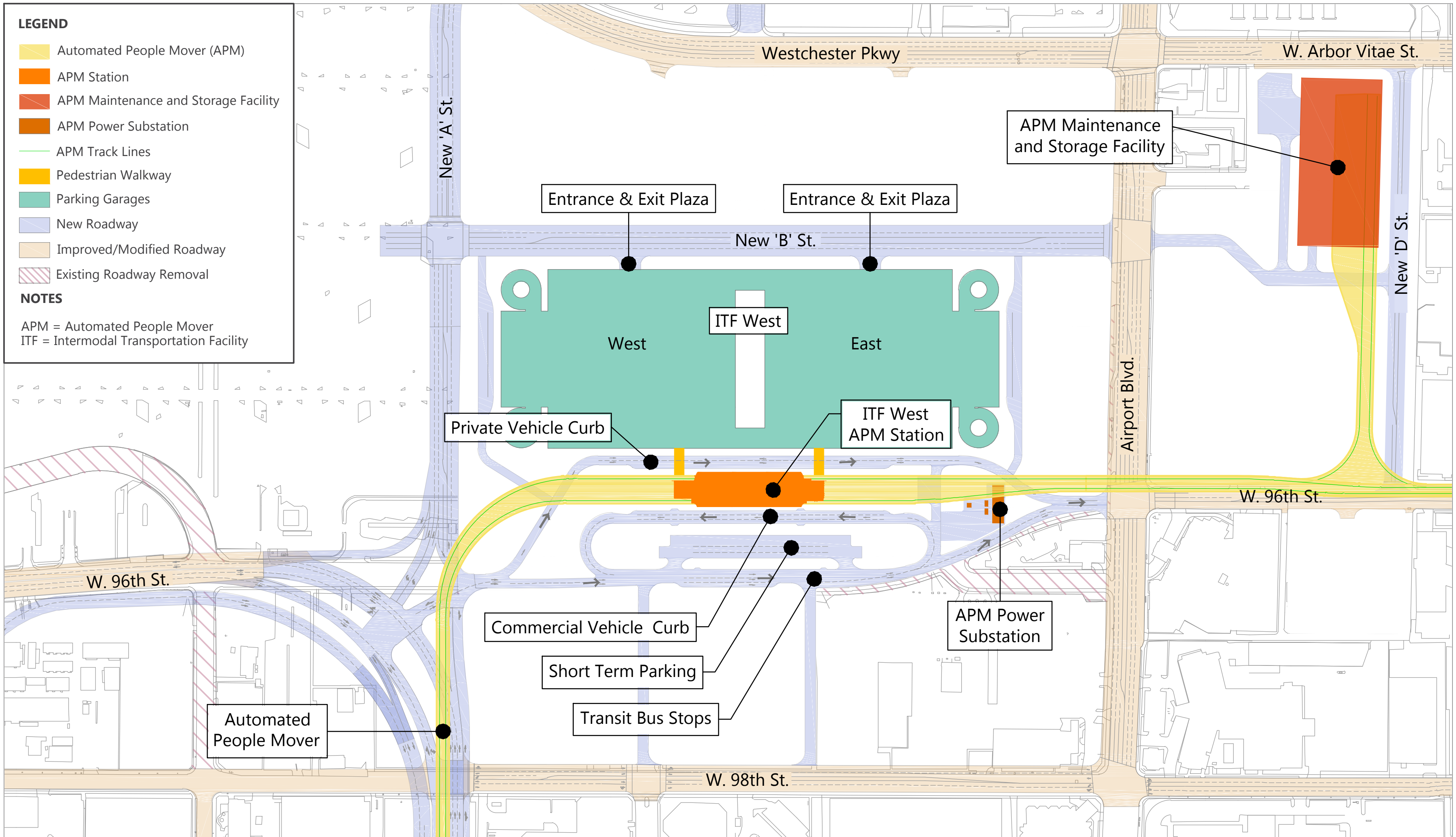

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 400 ft.

FIGURE 2-24

Intermodal Transportation Facility West
Conceptual Site Plan

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NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: SOM, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-25

Intermodal Transportation Facility West
Conceptual View

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2.4.2.1.1 ITF West APM Station

The ITF West APM Station would be located at the ITF West to provide access to the CTA, as shown on Figures 2-4 and 2-24. The two-story facility would have a footprint of approximately 13,000 sq. ft., with approximate dimensions of 45 feet in width (north-south) and 290 feet in length (east-west). The station would be located between the APM tracks, allowing for boarding and de-boarding on the same platform. The APM platform would have an elevation of approximately 50 feet above ground level. The roof level of the ITF West APM Station would have an elevation of approximately 80 feet above ground level. Two vertical circulation cores (one on the west end and one on the east end of the platform), consisting of elevators, escalators, and stairs, would provide passengers access to the ground level and to pedestrian walkways connecting the station to level two of the public parking structures. The pedestrian walkways would be approximately 20 feet above ground level and approximately 25 feet wide. **Figure 2-26** shows conceptual floor plans and section views of the ITF West APM Station.

2.4.2.1.2 Parking

The ITF West would include construction of two new adjacent and interconnected public parking structures providing approximately 8,000 total parking spaces.[20] The parking structures would have a total footprint of up to approximately 560,000 sq. ft. with approximate dimensions of 470 feet in width (north-south) and 1,300 feet in length (east-west). The total amount of floor space for the garage would be approximately 3.1 million sq. ft. Structural support for the proposed parking structures at the ITF West would be provided by column foundations or pilings, with a depth based on preliminary engineering of up to 50 feet below ground surface. **Figure 2-27** provides conceptual floor plans and section views of the ITF West public parking garages. The top level of the parking garage would be uncovered. The two public parking structures are generally referred to as the west section and the east section, as discussed below:

- The west section of the garage would be constructed first and would consist of surface level parking and 4 elevated parking decks (i.e., 5 levels of parking) with an approximate footprint of up to 280,000 sq. ft. The total floor space for the west section of the garage would be approximately 1.4 million sq. ft. Each level would have a capacity of approximately 725 parking spaces, or approximately 3,600 parking stalls total. The floor elevation of the top parking level would be approximately 48 feet above ground level. The height of the structure would be below all aircraft departure and arrival surfaces for Runways 6L-24R and 6R-24L. Two one-way helixes, one ascending and one descending, would provide circulation within the structure. Entrance and exit plazas would be located north of the structure at grade level adjacent to New 'B' Street.

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20 MapLAX, *Los Angeles International Airport, Landside Access Modernization Program, Program Brief*, January 2016.

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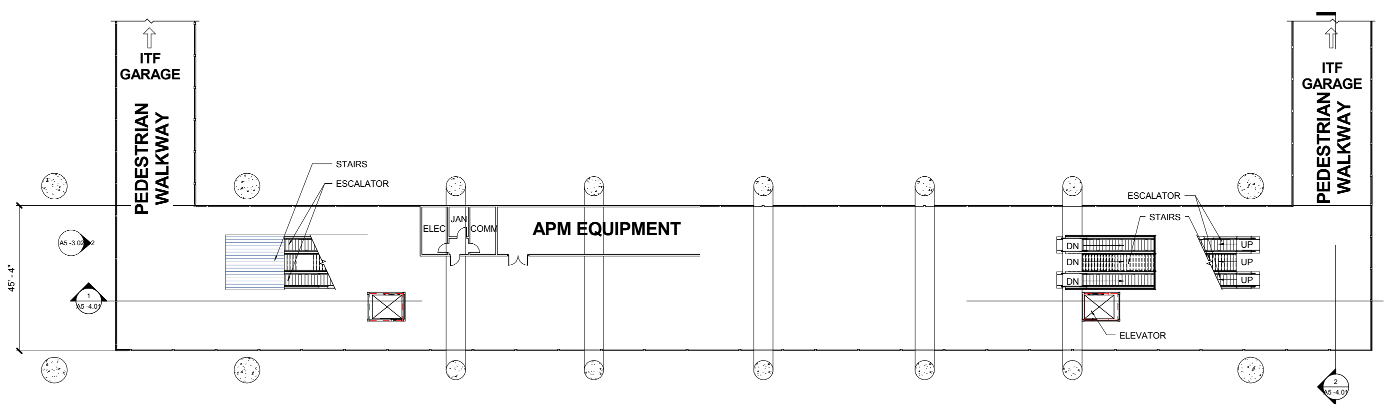
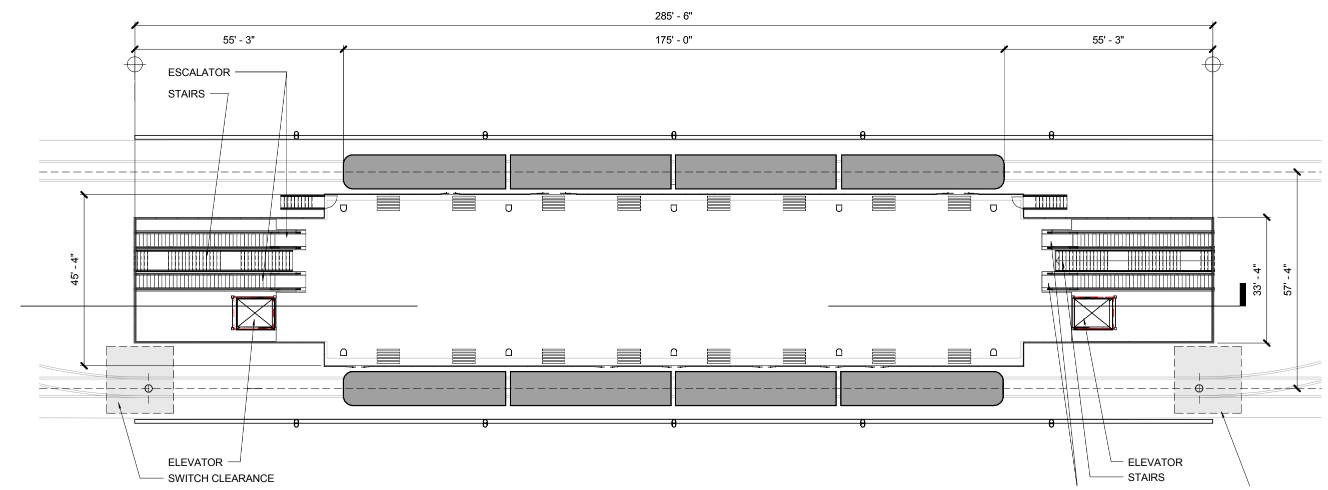
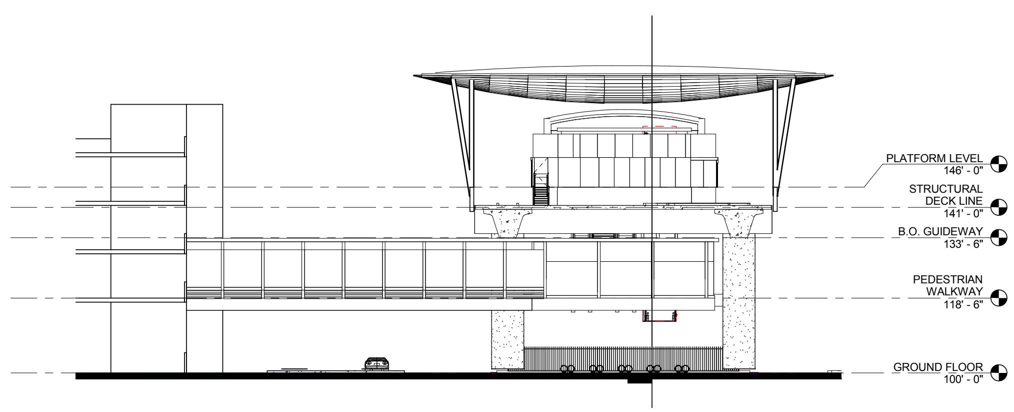


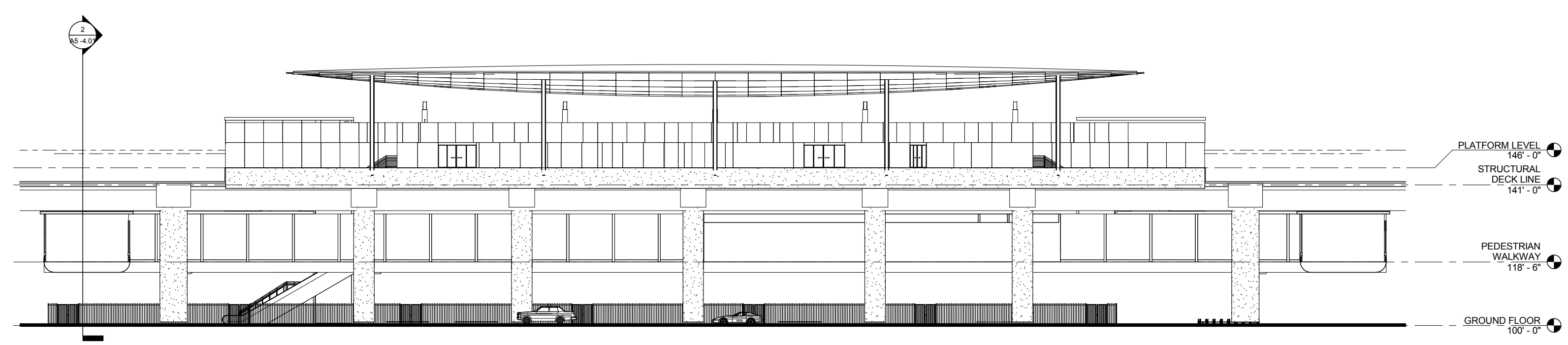
Walkway Level Floor Plan



Platform Level Floor Plan



West View



North View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-26

Intermodal Transportation Facility West APM Station
Conceptual Floor Plans and Section Views

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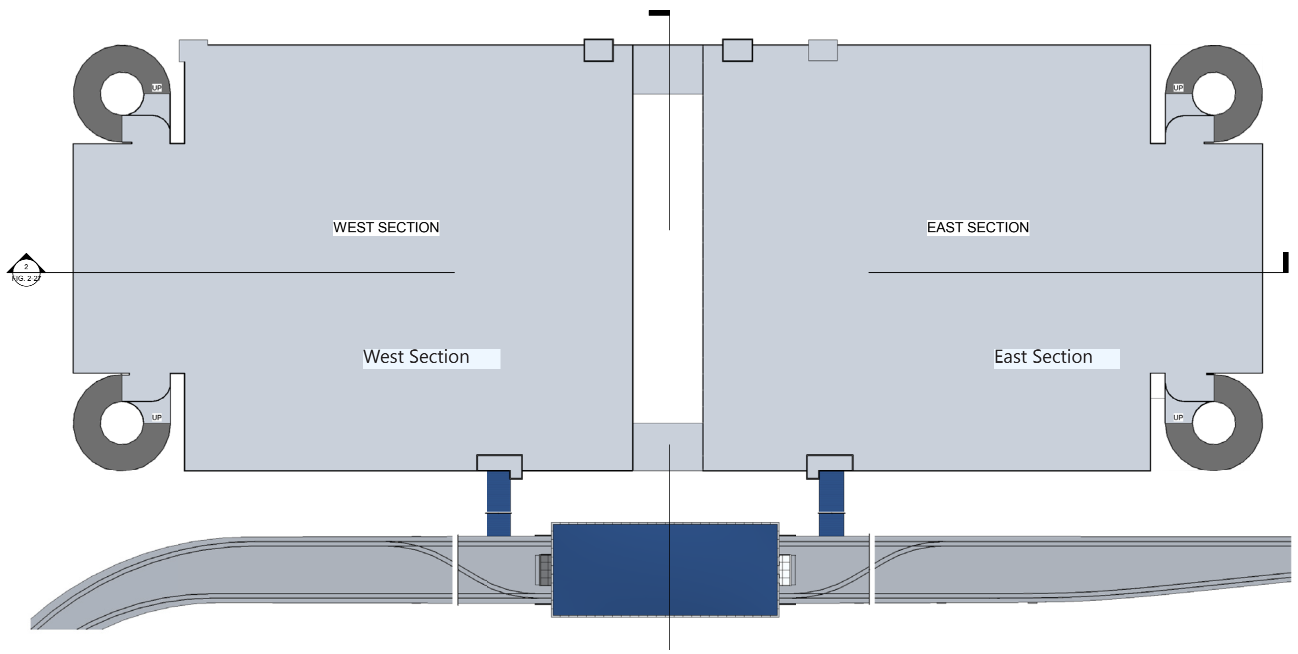
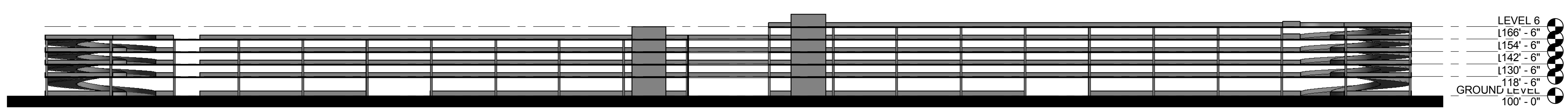


Floor Plan

North-South Section View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-27

Intermodal Transportation Facility West
Parking Garage Floor Plan and Section Views

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The east section of the garage would be constructed after the west section and would consist of surface level parking and 5 elevated parking decks (i.e., 6 levels of parking) with an approximate footprint of up to 280,000 sq. ft. The total floor space for the east section of the garage would be approximately 1.7 million sq. ft. Each level would provide for a capacity of approximately 725 parking spaces, or approximately 4,300 parking stalls total. The floor elevation of the top parking level would be approximately 60 feet above ground level. The height of the structure would be below all aircraft departure and arrival surfaces for Runways 6L-24R and 6R-24L. Two one-way helixes, one ascending and one descending, would provide circulation within the structure. Entrance and exit plazas would be located north of the structure at grade level adjacent to New 'B' Street.

2.4.2.1.3 Roadway Modifications

The ITF West would require modifications to adjacent streets to facilitate access to the site. Modifications would include: the closing of Jenny Avenue between Westchester Parkway and W. 96th Street; the addition of a new north–south street between Westchester Parkway and W. Century Boulevard (New 'A' Street); the addition of a new east-west street between New 'A' Street and Airport Boulevard (New 'B' Street); and modifications to W. 96th Street, Airport Boulevard, and W. 98th Street. Roadway improvements are further discussed in Section 2.4.4.

To reduce congestion and address the potential for conflicts between pedestrians and the various transportation modes, the ITF West would provide areas where Airport shuttles and private vehicles can separately and efficiently transfer Airport users to and from the APM system. The main vehicular access point to the ITF West APM Station would stem from a new one-way, one- to two-lane eastbound roadway between the New 'A' Street and Airport Boulevard, running parallel to and north of W. 96th Street. This roadway would split into four separate curb areas that would allow for the separation of commercial vehicles and private vehicles. There would be a total of approximately 2,100 feet of curb space available. Figure 2-24 shows an example of potential future curb assignments.

The commercial vehicle rotary, located on the south side of the ITF West APM Station, would be one-way to minimize pedestrian and vehicle conflicts, have restricted speeds, and allow for the staging of commercial shuttles and charter vans. The commercial vehicle rotary would provide space for parking shuttles, hotel shuttles, and charter vans. Another curb, along the south portion of the rotary would be made available to public transit bus operators to drop-off passengers who seek to access the Airport via the APM or transfer to another mode. Parking for operation and maintenance personnel would be provided at the east end of the rotary adjacent to the APM TPSS.

The private vehicle curbside, located on the north side of the ITF West APM Station, would provide approximately 650 feet of curb space, allowing for approximately 40 vehicles to pick-up or drop-off passengers at any given time.

2.4.2.1.4 Pedestrian Access

The ITF West would be located approximately 1,500 feet north of W. Century Boulevard, where many hotels and office buildings exist. Development of the ITF West facility would encourage and incorporate pedestrian access and movement, including pedestrian-only circulation paths. Sidewalks would be constructed between the ITF West APM Station and W. 98th Street, as well as to Airport Boulevard, to serve direct pedestrian movements; rest areas would be provided approximately every 300 feet. Rest areas may include benches, seating walls, resting posts, and/or railings. With the exception of where sidewalks cross driveways, sidewalks would be separated from vehicle parking and vehicle maneuvering areas by grade differences, paving material, and/or landscaping.

Direct and safe approaches for pedestrians would be provided from all adjacent streets to an interconnected pathway system within the ITF West area. Pedestrian paths would be highly visible, well-lit areas to enhance the safety of pedestrians. Street furniture, lighting fixtures, signposts, newspaper stands, trash receptacles, and other elements as appropriate, including handrails, would be located alongside each pedestrian accessible route. The ITF West APM Station, platforms, and pedestrian walkways would be compliant with the ADA.[21] The Project facilities would be designed to accommodate wheelchairs, and would include dynamic visual signs, and signs with braille to accommodate visually or auditory-impaired individuals.

2.4.2.2 ITF East

The ITF East would be located on a 22-acre site generally east of and adjacent to Aviation Boulevard between W. 96th and W. 98th Streets. The ITF East would be located approximately 630 feet north of W. Century Boulevard, on a portion of the 135-acre site known as Manchester Square (see **Figure 2-28**).[22] The main components of the ITF East include an APM station, an adjacent and interconnected public parking structure, a commercial vehicle curb, and internal circulation roads (see **Figure 2-29**). **Figure 2-30** shows a conceptual view of the ITF East.

The ITF East is planned primarily for use by private and commercial vehicles that are traveling to and from the Airport from the freeway system, or via W. Century Boulevard, Aviation Boulevard, and W. Arbor Vitae Street. The purpose of the ITF East is to provide a connection to transfer passengers from personal, commercial, and transit vehicles to and from the ITF East APM Station for access to the CTA and Airport passenger terminals. In addition to providing access to the CTA via the APM, this facility is located across Aviation Boulevard from Metro's proposed AMC 96th Street Transit Station (see Figure 2-29). Metro is planning a separate transit station, the proposed Metro AMC 96th Street Transit Station, immediately west of the ITF East, on the west side of Aviation Boulevard. The proposed Metro AMC 96th Street Transit Station and the ITF East APM Station would be connected to each other via vertical circulation elements and would provide a seamless connection between the APM and the Metro rail and bus transit system (see **Figure 2-31**).

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21 28 CFR Part 36, Americans with Disabilities Act, Title III Regulations, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, as amended by the final rule published on September 15, 2010.

22 The proposed CONRAC facility would occupy the majority of the remainder of the Manchester Square site.

SOURCE: Los Angeles World Airports, August 2014 (aerial photography - for visual reference only, may not be to scale; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-28

Intermodal Transportation Facility East Area Existing Conditions

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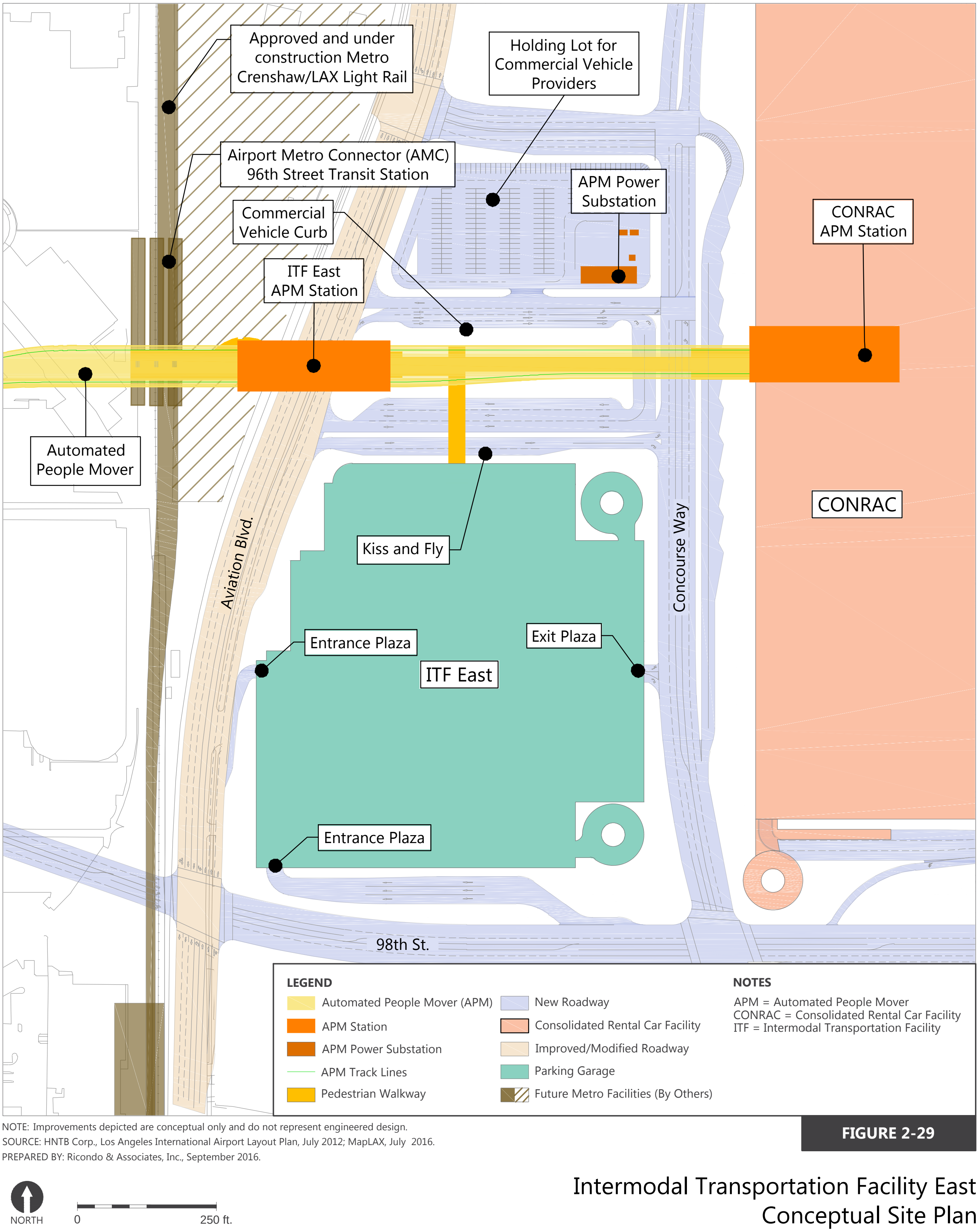

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-29

Intermodal Transportation Facility East Conceptual Site Plan

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NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: SOM, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-30

Intermodal Transportation Facility East
Conceptual View

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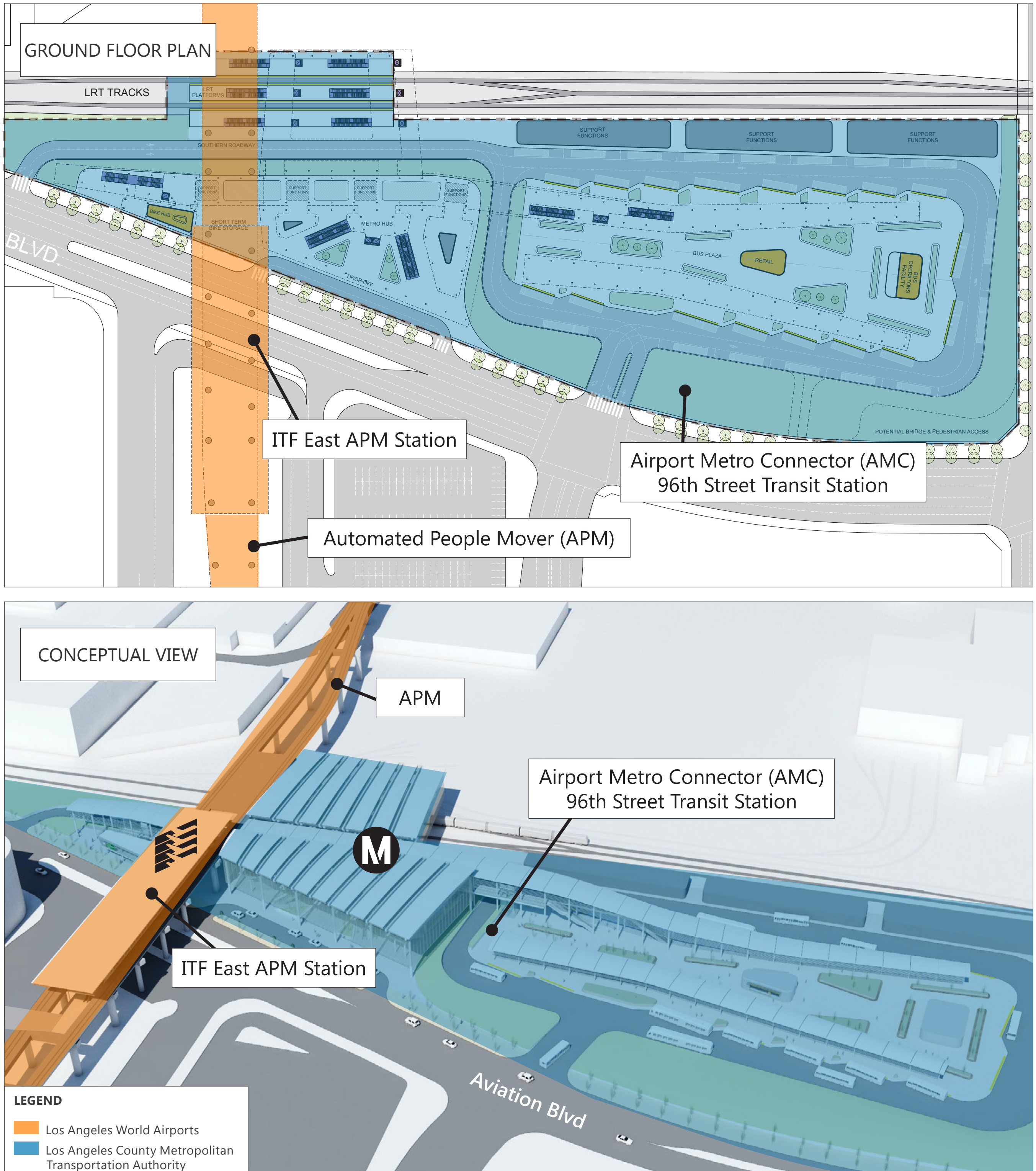

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: Grimshaw/Gruen, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-31

Airport Metro Connector Transit Station and Intermodal Transportation Facility East Interface

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The proposed Metro AMC 96th Street Transit Station would provide a multi-modal transportation center to connect LAX via the APM with the regional bus and rail transit system. The proposed Metro AMC 96th Street Transit Station would consist of three at-grade light rail transit platforms to be served by the Metro Crenshaw/LAX Line and the extension of the Metro Green Line. The proposed Metro AMC 96th Street Transit Station would also consist of a bus plaza and terminal facility for Metro and municipal bus operators, a bicycle hub with parking for up to 150 bicycles, passenger vehicle pick-up and drop-off area, and a Metro center/building to connect passengers between the various modes of transportation. The proposed Metro AMC 96th Street Transit Station would integrate with the APM station, provide a convenient connection for passengers traveling between LAX and the rest of the bus and rail system, and is designed to reduce trips and has the potential to increase the share of transit trips to and from LAX.

Public parking would be provided south of the ITF East APM Station in a parking structure. Pick-up and drop-off curbs for private vehicles, limousines, taxis, and other commercial vehicles would also be located in close proximity to the APM station, which would be accessible through vertical circulation consisting of elevators, escalators, and stairwells. An area just north of the ITF East would provide up to 200 spaces for certain commercial vehicles to park or dwell while waiting for passengers. Additional details on each of the main ITF East components are provided below.

As with the ITF West, the ITF East would be located near existing hotels and businesses located along W. Century Boulevard. Therefore, development of the ITF East facility would incorporate pedestrian access and movement to the overall flow of the site. To the extent possible, sidewalks would be separated from vehicle parking and vehicle maneuvering areas by grade differences, paving material, and/or landscaping.

2.4.2.2.1 ITF East APM Station

An APM Station would be located at the ITF East to provide access to the CTA, as shown on Figures 2-4 and 2-29. The two-story facility would have a footprint of approximately 13,000 sq. ft., with approximate dimensions of 45 feet in width (north-south) and 290 feet in length (east-west). The station would be located between the APM tracks, allowing for boarding and de-boarding on the same platform. The APM platform would have an elevation of approximately 50 feet above ground level. The roof level of the ITF East APM Station would have an elevation of approximately 85 feet above ground level. **Figure 2-32** shows conceptual floor plans and section views of the ITF East APM Station. A vertical circulation core on the east end of the platform, consisting of elevators, escalators, and stairs, would provide passenger access to the ground level and vehicle curbs and to a pedestrian walkway providing access to level two of the ITF East parking structure and to the CONRAC. The pedestrian walkway would be approximately 25 feet above ground level and between approximately 25 feet and 45 feet wide. The pedestrian walkway to the ITF East parking structure would be approximately 250 feet long; the pedestrian walkway connecting the ITF East to the CONRAC would be approximately 1,400 feet long (see **Figure 2-33**).

Access to the proposed Metro AMC 96th Street Transit Station would be accommodated through escalators, elevators, and stairs at the west end of the APM platform. The pedestrian walkway to the proposed Metro AMC 96th Street Transit Station would be approximately 25 feet above ground level and approximately 25 feet wide.

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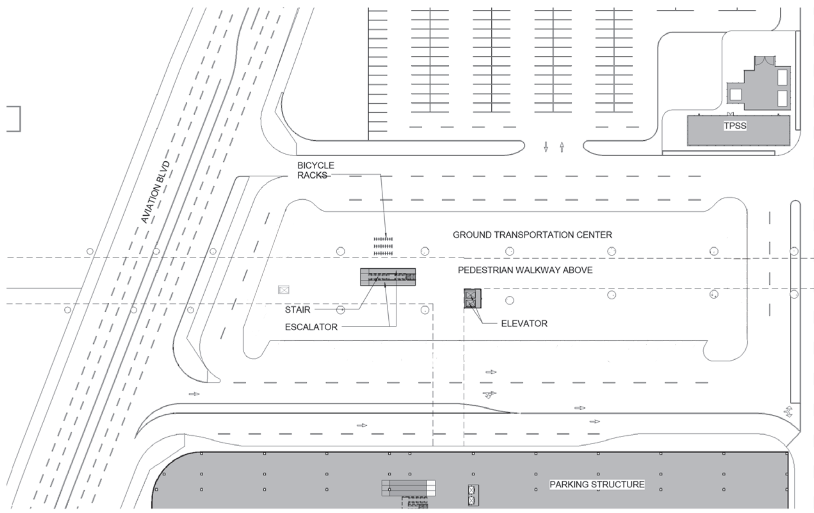
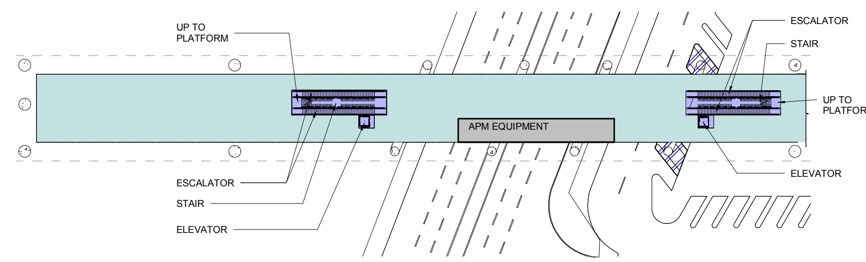
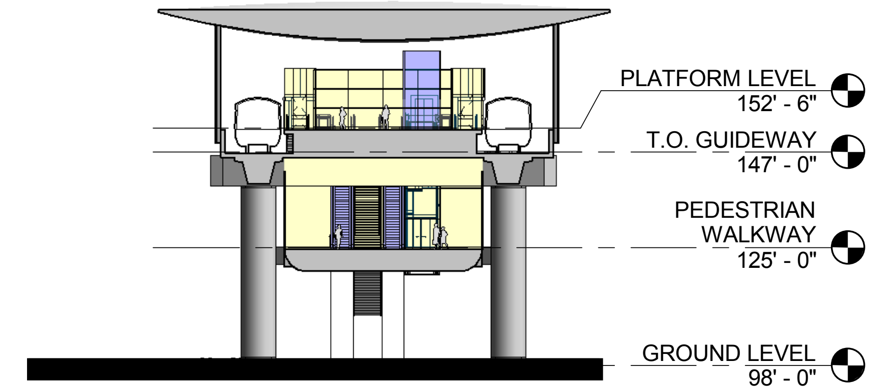


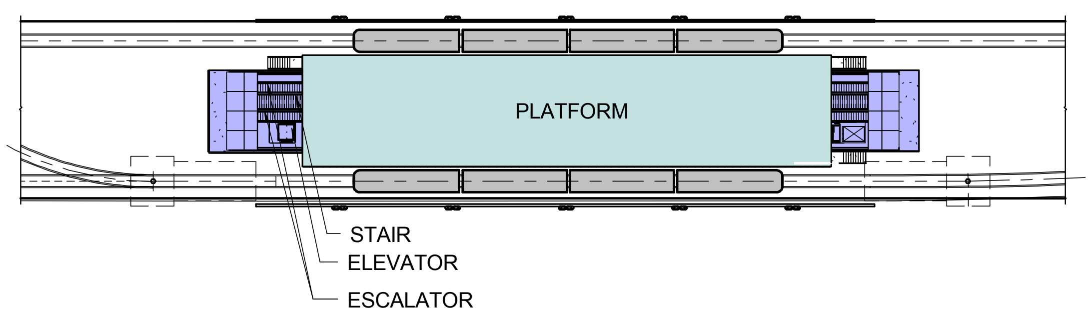
Ground Floor Plan



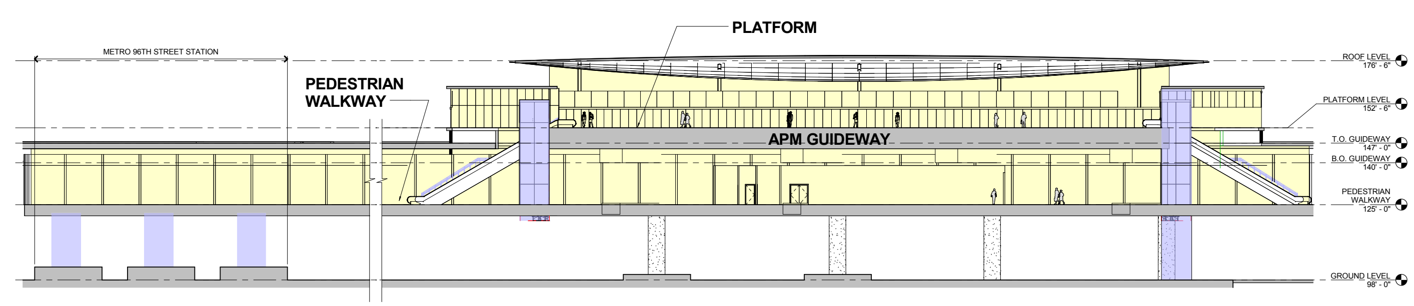
Pedestrian Walkway Plan



North-South Section View



Platform Plan



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MapLAX, Los Angeles International Airport Landside Access Modernization Program, Program Brief, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-32

Intermodal Transportation Facility East APM Station
Conceptual Floor Plans and Section Views

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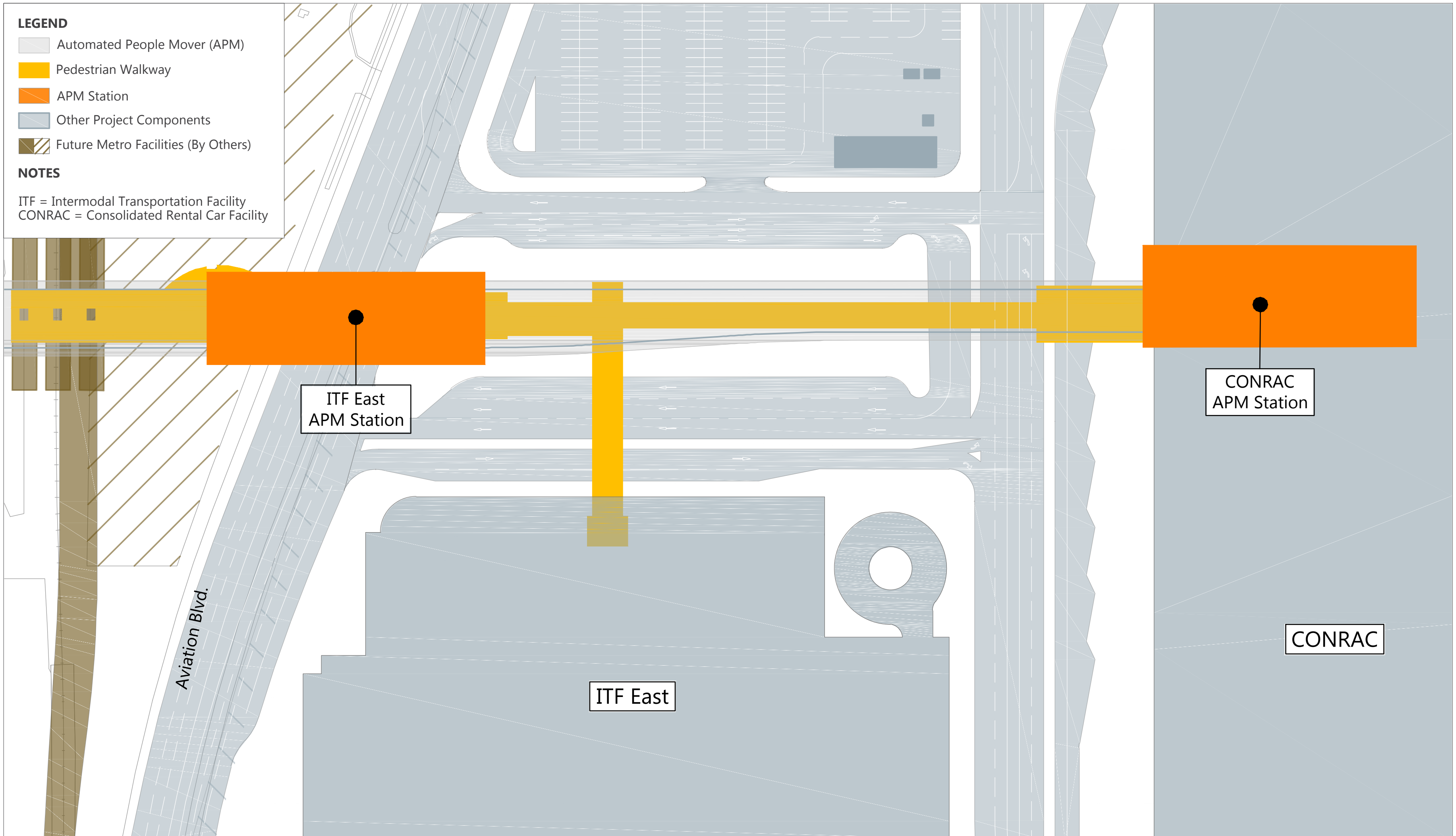

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 150 ft.

FIGURE 2-33

Intermodal Transportation Facility East Pedestrian Walkways

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2.4.2.2.2 Parking

A new parking garage with a surface level and 5 elevated decks (i.e., 6 levels of parking) would provide parking for passengers and airport employees at the ITF East. The facility would have a footprint of up to approximately 510,000 sq. ft. with approximately 8,300 parking spaces.[23] The total floor space of the parking garage would be approximately 3.1 million sq. ft. The floor elevation of the top parking level would be approximately 60 feet above ground level. Structural support for the proposed parking garage at the ITF East would be provided by column foundations or pilings, with a depth based on preliminary engineering of up to 50 feet below ground surface. Primary access to the parking garage would be located on the south side of the facility from W. 98th Street at grade level. An additional entrance would be located on the west side of the facility from northbound Aviation Boulevard at grade level. Egress from the ITF East parking garage would be provided to Concourse Way. The exit plaza would be located on the east side of the facility at grade level. Circulation within the structure would be provided through a set of one-way helixes, one ascending and one descending, allowing the elevated parking decks to be flat. Conceptual floor plans and section views of the ITF East parking garage are provided on **Figure 2-34**. The top level of the parking garage would be uncovered, allowing LAWA to consider installation of canopied solar panels on the roof of the parking structure.

Roadway Modifications

Roadway modifications in the vicinity of the ITF East are planned primarily to ease access to the APM for vehicles traveling to and from areas east of the Airport and/or the freeway system. To reduce congestion and address the potential for conflicts between pedestrians and the various transportation modes, the ITF East would provide areas where airport shuttles and private vehicles can separately and efficiently transfer airport users to the APM system. There would be a total of approximately 2,000 feet of curb space available for use by private and commercial vehicles. Operations of the ITF East, as further discussed below, would allow for flexible curb areas. An example of potential curb assignments is shown on Figure 2-29.

The commercial vehicle rotary, located around the ITF East APM Station, would minimize pedestrian and vehicle conflicts, have restricted speeds, and allow for the staging of Airport-serving buses and charter vans. The commercial vehicle rotary would provide space for multiple types of commercial modes, including but not limited to, shared ride vans, Flyaway buses, charter buses, transit buses, and charter vans. The private vehicle curbside, located south of the ITF East APM Station on the north side of the ITF East parking garage, would provide space for approximately 25 vehicles to pick-up or drop-off passengers at any given time. Parking for operation and maintenance personnel would be provided in the short-term parking lot north of the ITF East APM Station.

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[23] MapLAX, *Los Angeles International Airport, Landside Access Modernization Program, Program Brief*, January 2016.

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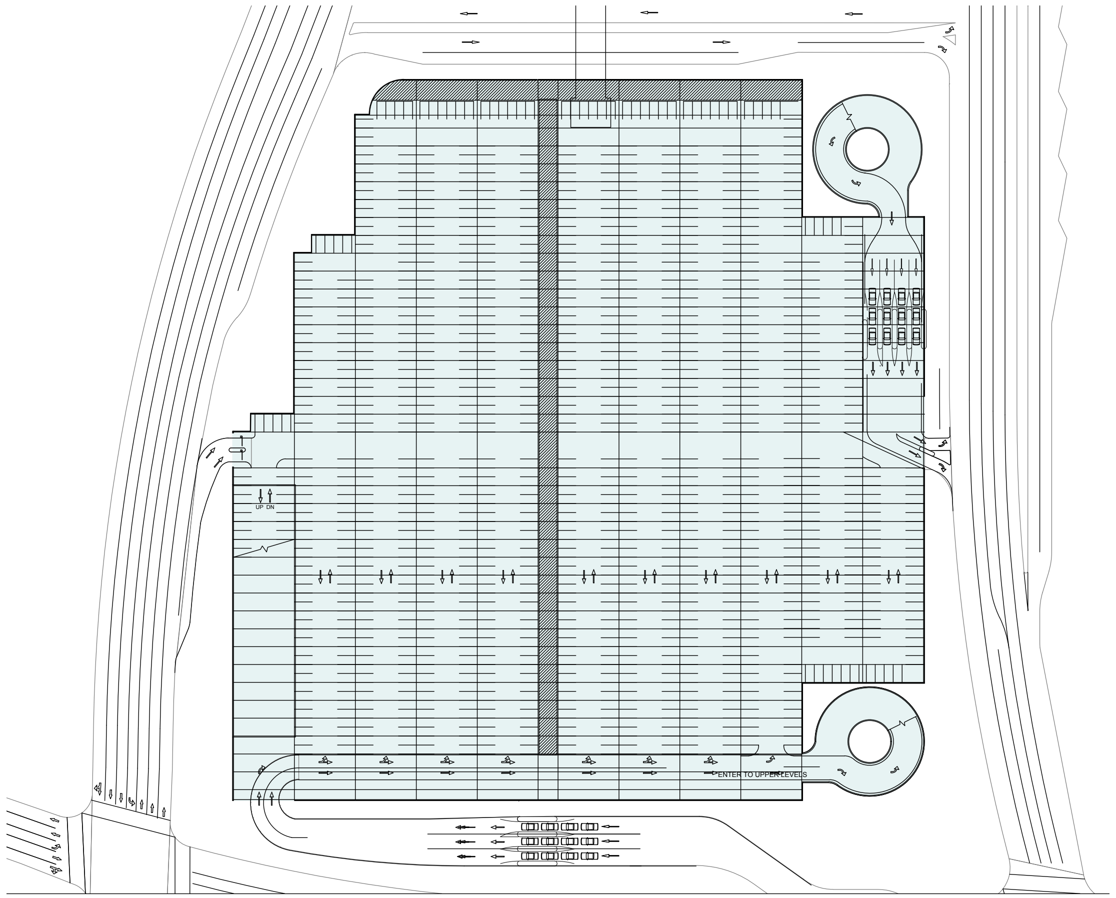
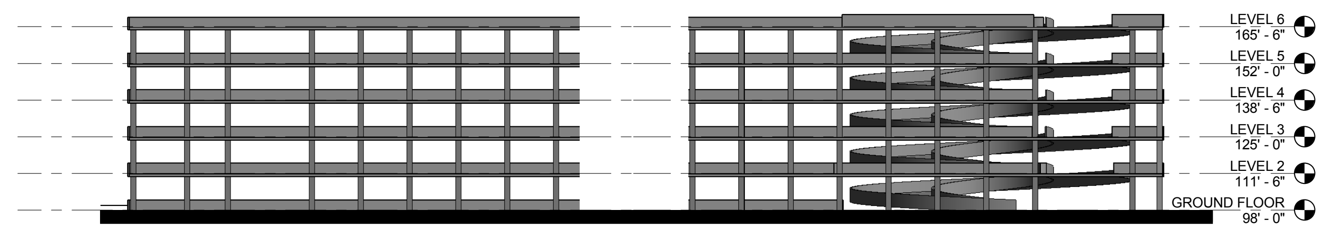
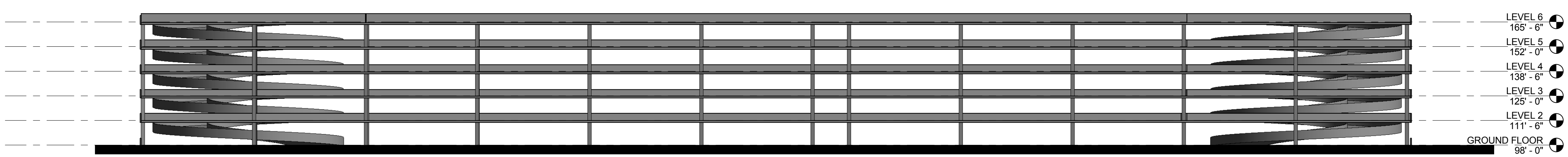


Floor Plan



North-South Section View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: Parsons Brinckerhoff, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-34

Intermodal Transportation Facility East
Parking Garage Floor Plan and Section Views

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2.4.2.2.3 Pedestrian Access

The ITF East would be located approximately 600 feet north of W. Century Boulevard, where many hotels and office buildings exist, and adjacent to the proposed Metro AMC 96th Street Transit Station. Therefore, development of the ITF East facility would encourage and incorporate pedestrian access and movement both to and within the site. On-site sidewalks would be constructed to serve direct pedestrian movements; rest areas would be provided approximately every 300 feet. Rest areas may include benches, seating walls, resting posts, and/or railings. With the exception of where sidewalks cross driveways, sidewalks would be separated from vehicle parking and vehicle maneuvering areas by grade differences, paving material, and/or landscaping.

Direct and safe approaches for pedestrians would be provided from all adjacent streets to an interconnected pathway system within the ITF East area. Pedestrian paths would be highly visible, well-lit areas to enhance the safety of pedestrians. Street furniture, lighting fixtures, signposts, newspaper stands, trash receptacles, and other elements, as appropriate, would be located alongside each pedestrian accessible route. The ITF East APM Station, platforms, and pedestrian walkways would be compliant with the ADA.[24] The Project facilities would be designed to accommodate wheelchairs, and would include dynamic visual signs, and signs with braille to accommodate visually or auditory-impaired individuals.

2.4.3 CONSOLIDATED RENTAL CAR FACILITY

The proposed CONRAC would provide a centralized location for rental car agencies serving LAX. A CONRAC is a facility or complex that hosts multiple rental car agencies in one location. It typically provides facilities for customers to complete rental car contract paperwork, pick-up and drop-off their vehicles, and for the rental car companies to stage, store, and service the vehicles in preparation for renting them to the next customer. The proposed CONRAC at LAX is intended to improve:

- Rental car customer experience;
- Day-to-day operations of the rental car companies; and
- Traffic flow in the CTA by removing all rental car shuttles driving on airport roadways, as well as on surface streets between the CTA and the individual rental car facilities.

Currently, there are over 20 properties located north and east of the Airport that are used by the various rental car agencies for their individual operations (see **Figure 2-35**). The fact that the rental car companies are scattered through the area leads to driver confusion and challenging wayfinding. As a result, there are over 50 directional signs currently installed on surface streets to direct rental car customers to the various rental car facilities, which leads to driver confusion, causing traffic and congestion on the surrounding streets.

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[24] 28 CFR Part 36, Americans with Disabilities Act, Title III Regulations, Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities, as amended by the final rule published on September 15, 2010.

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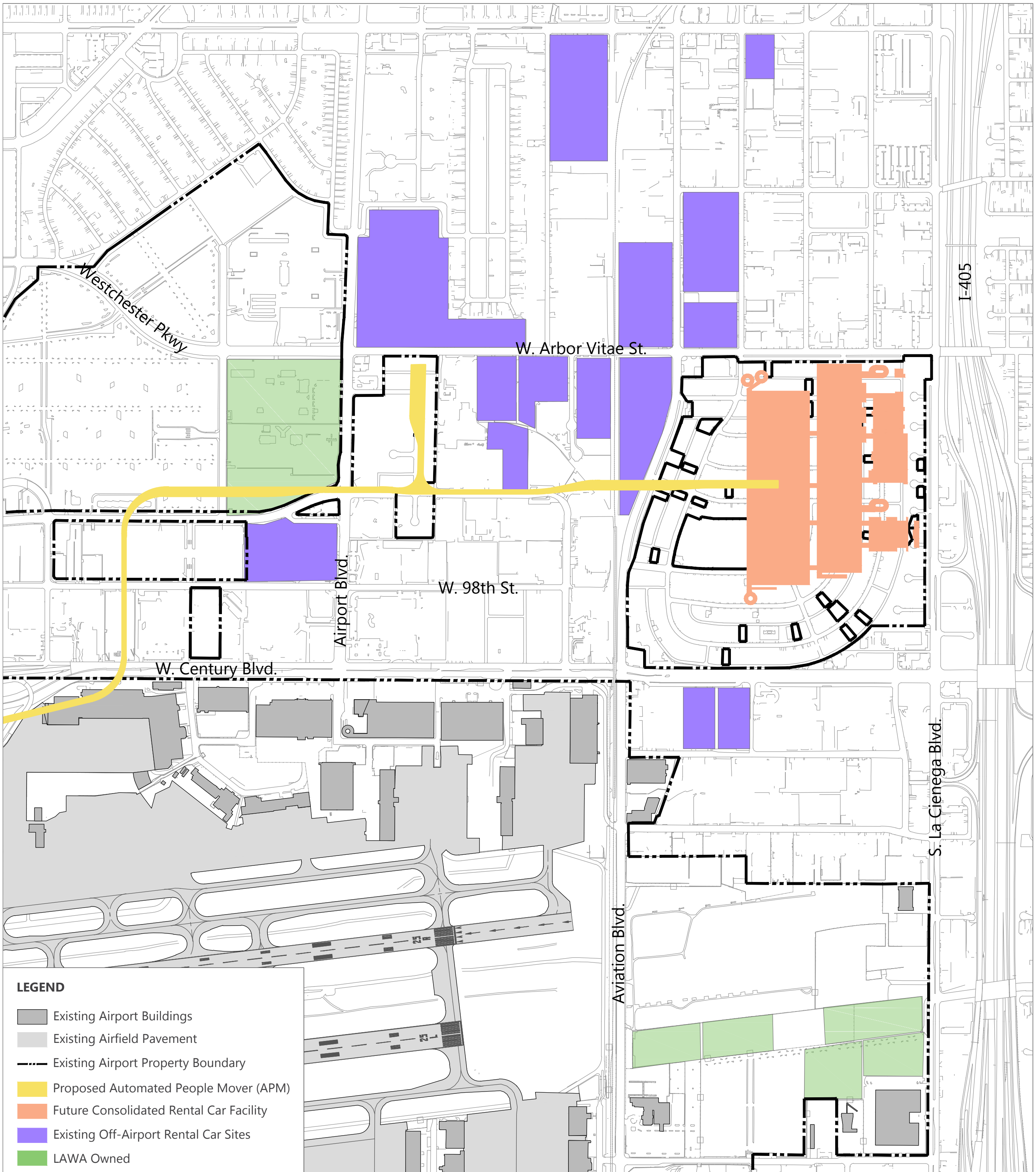

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 1,200 ft.

FIGURE 2-35

Existing Rental Car Sites

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The CONRAC would eliminate over 3,200 shuttle trips a day to/from the CTA[25] and surrounding streets by consolidating individual rental car operations into one location.

LAWA seeks to improve traffic congestion in the surrounding area of LAX by relocating the majority, and potentially all, of the rental car operations into a centralized location with a direct and efficient connection to the APM system, and improved connectivity to the I-105 and I-405 freeways. The CONRAC would be located south of W. Arbor Vitae Street, west of S. La Cienega Boulevard (and just west of I-405), north of the extended W. 98th Street, and east of the extended Concourse Way (see **Figure 2-36**). The CONRAC would also be located just east of the proposed ITF East and the proposed Metro AMC 96th Street Transit Station (see **Figure 2-37**).

2.4.3.1 CONRAC Components

The CONRAC would have a footprint of approximately 2.1 million sq. ft. with dimensions of 1,800 feet in length (north-south) and approximately 1,400 feet in width (east-west). The main components of the CONRAC facility include the Customer Service Building (CSB), Rental Car Ready/Return Parking Area (RAC), Quick Turnaround Area (QTA), QTA Support and Additional Site Functions, and Idle Storage. Each of these components are described below and shown on **Figure 2-38**; projected space allocations for these components are shown in **Table 2-6**. Conceptual floor plans for each level of the CONRAC, as well as section views, are provided on **Figure 2-39**. Structural support for the CONRAC would be provided by column foundations, with a depth based on preliminary engineering of up to 100 feet below ground surface.

- **Customer Service Building (CSB).** The CSB is the public hub of the CONRAC. Similar to an airport passenger terminal, the CSB is the area in which arriving passengers pick-up their rental contracts from the various agencies, and are provided a range of amenities such as restrooms, concession services, and seating areas with internet access. The approximately 278,000 sq. ft. CSB would be located on Level 4 (roof level) of the Ready/Return parking garage with a direct connection to the CONRAC APM Station at that level. Wayfinding signage would allow customers to easily locate the individual agencies within the CSB, as well as direct them to their rented vehicle on the three levels of Ready/Return garage below the CSB. Four vertical circulation cores with escalators and elevators, would transport customers between the CSB and each level of the Ready/Return garage. The roof of the CSB would have an elevation of approximately 75 feet above ground level.

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[25] City of Los Angeles, Los Angeles World Airports, *Ground Transportation Report, Los Angeles International Airport,* February 23, 2015.

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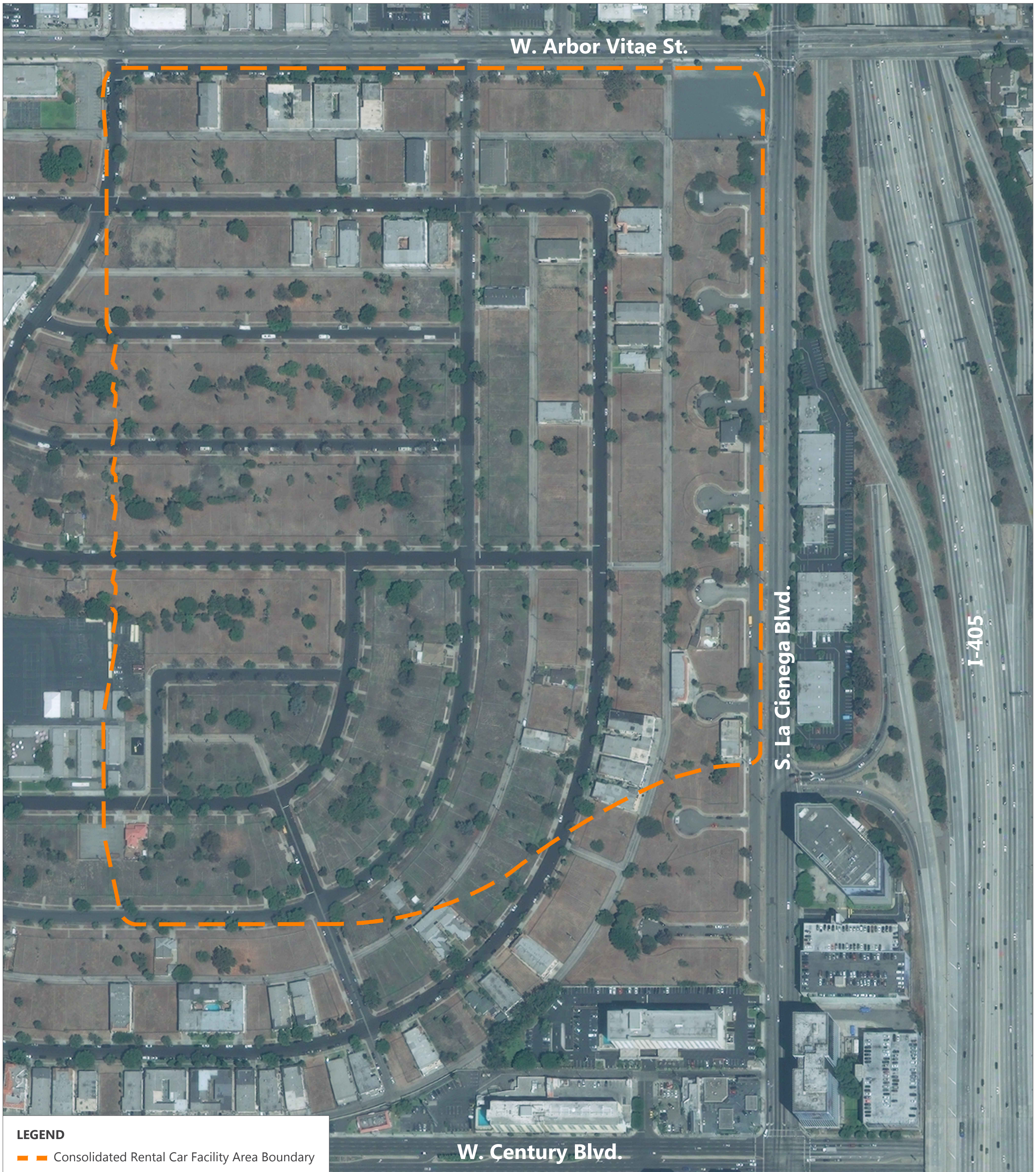

SOURCE: Los Angeles World Airports, August 2014 (aerial photography - for visual reference only, may not be to scale; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-36

NORTH 0 350 ft.

Consolidated Rental Car Facility Area
Existing Conditions

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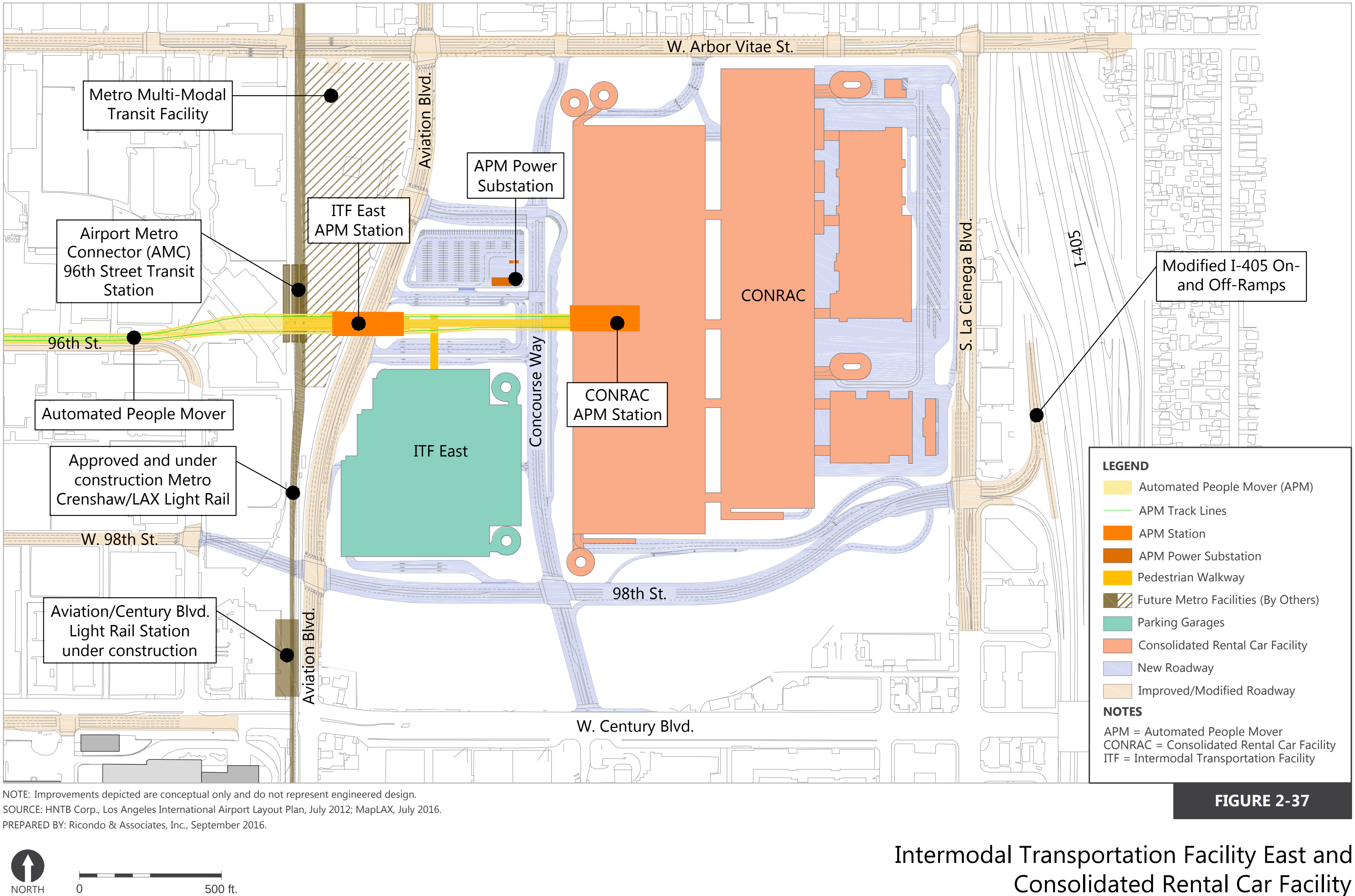

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-37

Intermodal Transportation Facility East and Consolidated Rental Car Facility

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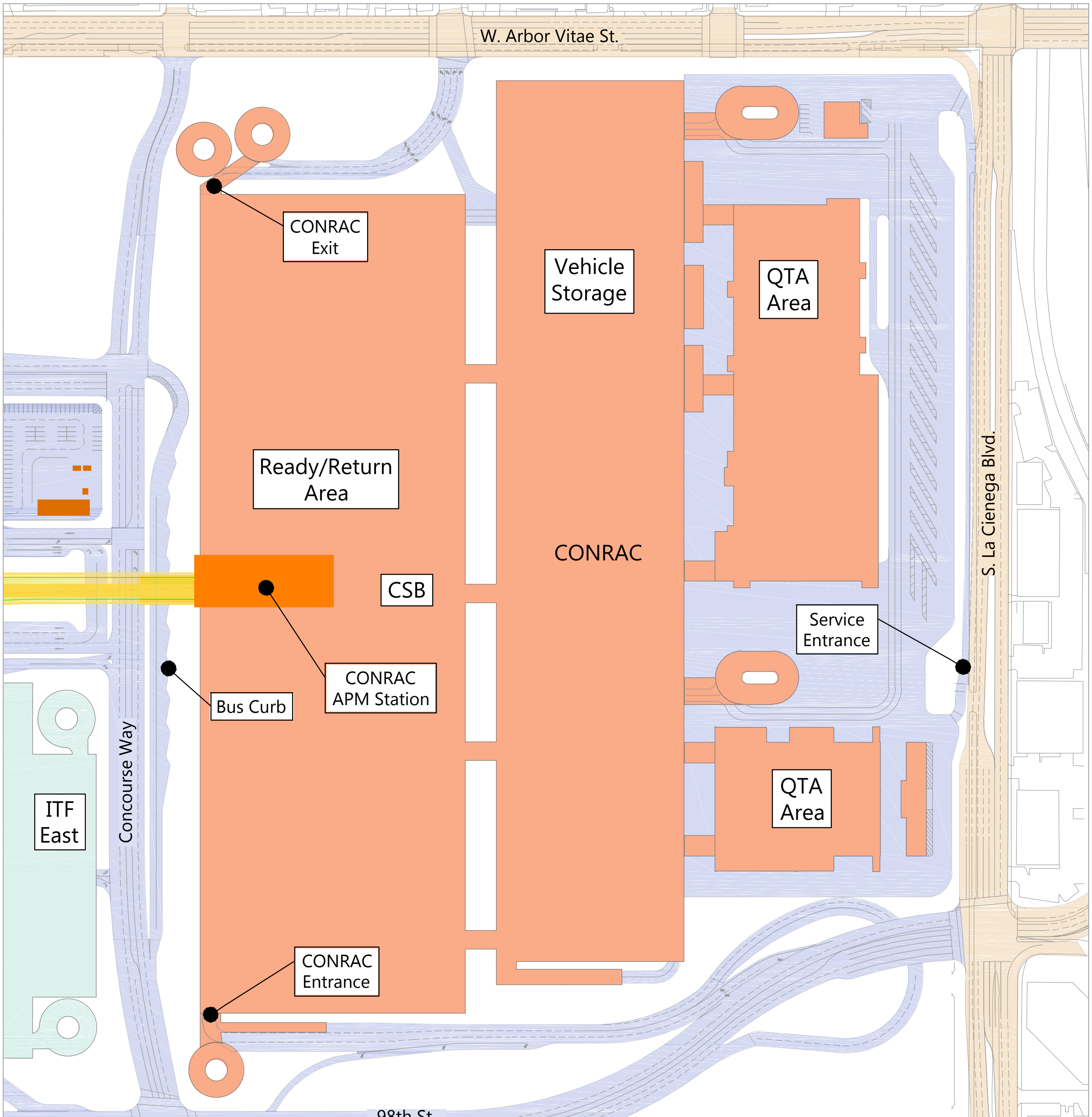

LEGEND

- Automated People Mover (APM)
- APM Power Substation
- APM Station
- Consolidated Rental Car Facility
- Improved/Modified Roadway
- New Roadway
- Parking Garages
- APM Track Lines

NOTES

APM = Automated People Mover
CONRAC = Consolidated Rental Car Facility
ITF = Intermodal Transportation Facility
QTA = Quick Turn Around
CSB = Customer Service Building

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 300 ft.

FIGURE 2-38

Consolidated Rental Car Facility
Conceptual Site Plan

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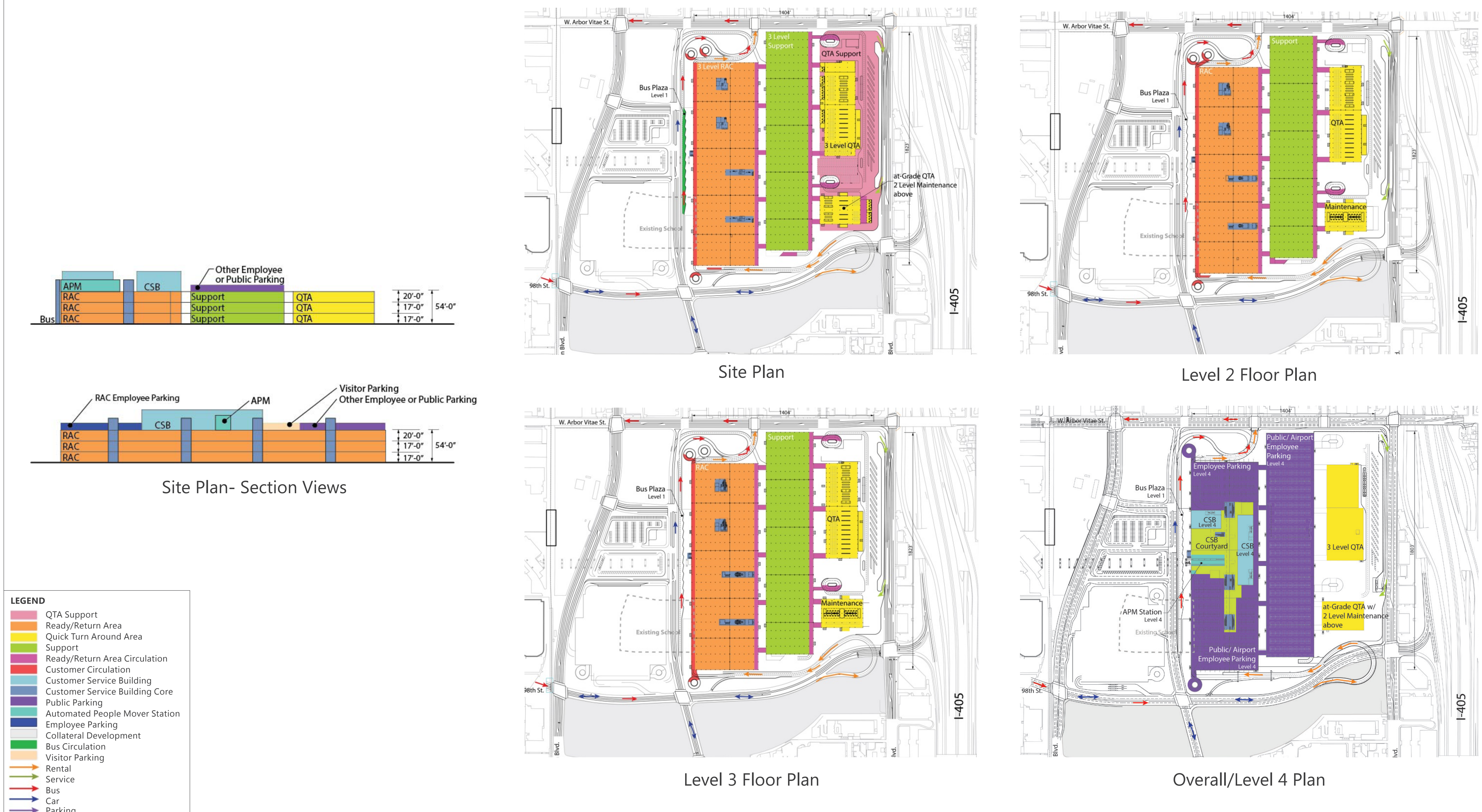

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: TranSystems, Los Angeles International Airport Consolidated Rental Car Facility, Project Definition Document, February 26, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-39

Consolidated Rental Car Facility
Sample Floor Plans and Section Views

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Table 2-6: CONRAC Space Allocation

CONRAC COMPONENT	FLOOR SPACE (SQ. FT.)
Customer Service Building	278,000
Rental Car Ready/Return Parking Area	2,400,000
Quick Turnaround Area (QTA)	780,000
Idle Storage Area	1,900,000
QTA Support and Additional Site Functions	215,000
Employee and Visitor's Parking	362,000
Bus Plaza	54,000
APM Station	23,000
Total:	**6,000,000** 1/

NOTES:

1/ Total may not add exactly due to rounding.

SOURCE: City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Consolidated Rental Car Facility Project Definition Document*, February 26, 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

- **Rental Car Ready/Return Parking Area**. The three-level Ready/Return garage would be used primarily for customer vehicle pick-up and return. The Ready/Return garage would have a total floor space of approximately 2.4 million sq. ft. and would accommodate approximately 8,000 vehicles. The roof level of the Ready/Return garage would have an elevation of approximately 55 feet above ground level. The CSB and the Ready/Return garage would be the only areas in the CONRAC accessible to the public. Each level of the Ready/Return garage would accommodate one rental car brand-family operator combined with existing and future independent operators. All customers would have access to the vertical circulation cores connecting the CSB to the Ready/Return garage decks. Independent operators assigned to the ground floor would be located in the south third of each garage deck.

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- **Quick Turnaround Area (QTA).** The QTA portion of the CONRAC, including the QTA itself as well as support areas, would be three levels totaling approximately 780,000 sq. ft. in floor space. The QTA would consist of three major service components: fueling, car wash, and maintenance bays. Only light maintenance would occur in the QTA, including oil and other fluid changes, tire rotations, part changes, lubrication, and brake repairs. Administration offices for the supervision of these maintenance activities would also be located in the QTA. The QTA would consist of two buildings, accommodating approximately 180 fueling positions, 40 wash bays, and 60 maintenance bays. The north QTA Building would provide fueling and wash facilities at all three levels. Maintenance bays would be located only on the ground level in this building. The south QTA Building would accommodate fueling, washing, and light maintenance for each independent operator at the ground floor. In addition, this structure would provide maintenance facilities at levels 2 and 3. Vehicular bridges would connect the QTA to the Idle Storage Building of the CONRAC at levels 2 and 3. The roof of each QTA building would have an elevation of approximately 60 feet above ground level.

  The QTA would incorporate various design features, such as enhanced fire suppression features, extension of electrical hazard areas, installation of emergency warning lights, accessible fire control rooms, integrated drainage, and an increased number of emergency stop buttons and egress paths (i.e., emergency stairs). Additionally, the QTA buildings would be designed with open architecture to increase exhaust ventilation throughout the facilities. Double-walled steel piping would be constructed within the buildings to serve as a secondary containment in the event of a fire.

- **QTA Support and Additional Site Functions.** The QTA Support facility would contain equipment and systems to support the operation of the various components of the QTA. The QTA Support Facility would be a common-use building located in close proximity to the other QTA buildings. The equipment and distribution systems for the three major QTA operations (car wash systems, fueling systems and maintenance systems) would be contained in the QTA Support Facility. In addition, space would be provided for car carriers to offload new cars into the rental car fleet and remove vehicles being retired from the fleet. Approximately 340 secured, at-grade parking spaces would be provided to store vehicles brought in by the rental car carriers. These vehicles would be moved to levels 2 and 3 of the Idle Storage Building via secured helixes adjacent to the QTA. Fuel trucks traveling to the CONRAC facility would also use the area east of the QTA. Gasoline to support the QTA would be stored in seven 45,000-gallon double-walled underground storage tanks (USTs). The QTA Support facility would have a footprint of approximately 215,000 sq. ft.

- **Idle Storage.** The Idle Storage area would be used by the rental car operators for staging of vehicles in their fleets that are on standby to be transferred into ready vehicles as dictated by customer demand. The Idle Storage area may also be used as overflow staging/queuing for the QTA in peak return periods. If not required for rental car storage, the roof of the Idle Storage area could be used as approximately 2,200 airport employee parking spaces. The Idle Storage area would contain approximately 1,900,000 sq. ft. of floor space to accommodate approximately 10,000 vehicles.

- **Employee and Visitor's Parking.** Rental car company employee parking would be available for all rental car operators and management staff on Level 4 of the Ready/Return garage. This parking area would be accessible from the Ready/Return area, the CSB, and the QTA. Rental car company employee parking would consist of approximately 1,100 employee and 100 visitor parking spaces, covering approximately 362,000 sq. ft. of floor space.

- **Bus Plaza**. A bus plaza would be provided on the west side of the CONRAC at ground level. The plaza would support an interim busing operation (should the CONRAC come online before completion of the APM), off-Airport rental agency shuttles, and back-up rental car shuttles (to be used in the event of an APM shutdown). Twelve bus bays would be provided, along with a vertical circulation core to the CSB. The bus plaza would be approximately 54,000 sq. ft. in size.

As indicated in Table 2-6, the total floor space of the CONRAC facility would equal approximately 6 million sq. ft.

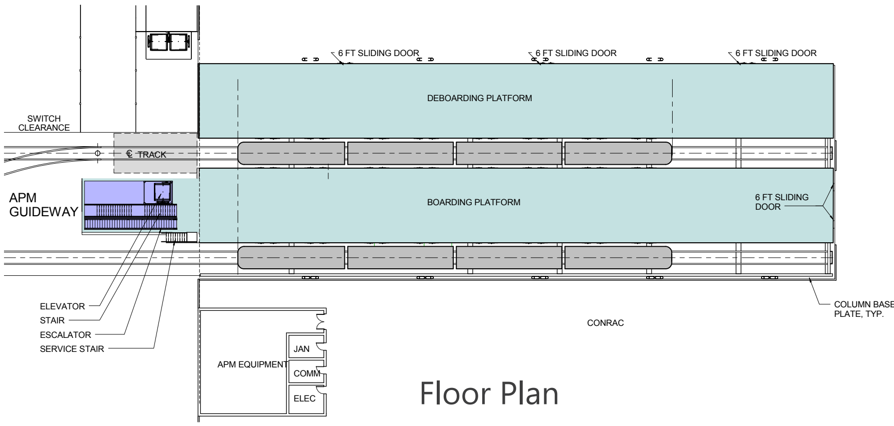
2.4.3.2 APM Station

The CONRAC APM Station would be located on the fourth level of the CONRAC, adjacent to and connected to the CSB; there would be no level changes between the CSB and the APM platforms. The CONRAC APM Station would have separate boarding and de-boarding platforms at an elevation of approximately 50 feet above ground level. Arriving rental car customers would use the north platform; departing customers on their way to the Airport passenger terminals or the proposed Metro AMC 96th Street Transit Station at W. 96th Street would use the south platform. Conceptual floor plans and section views for the proposed CONRAC APM Station are shown on **Figure 2-40**. The roof level of the CONRAC APM Station would have an elevation of approximately 85 feet above ground level. Customers would be able to transition easily and intuitively from the CSB to the various Ready/Return garage levels in the CONRAC via multiple vertical circulation cores, containing both escalators and elevators. A 350-foot walking distance is a commonly-used rental car industry metric for an acceptable customer walking distance; the majority of the ready vehicles would be stored within this distance from the vertical circulation cores.

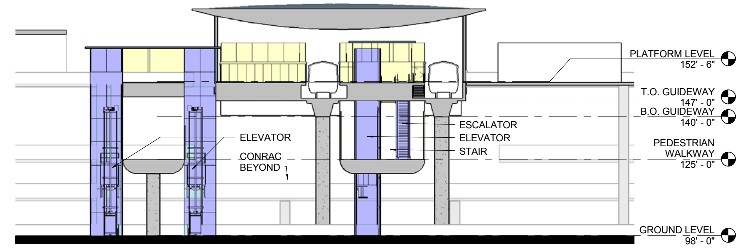
2.4.3.3 Roadways and Circulation

New roadways would be constructed to provide access to the ITF East and CONRAC facilities. Access points would be constructed at Aviation Boulevard, W. Century Boulevard, S. La Cienega Boulevard, and W. Arbor Vitae Street. External connections and roadway improvements are discussed in Section 2.4.4.

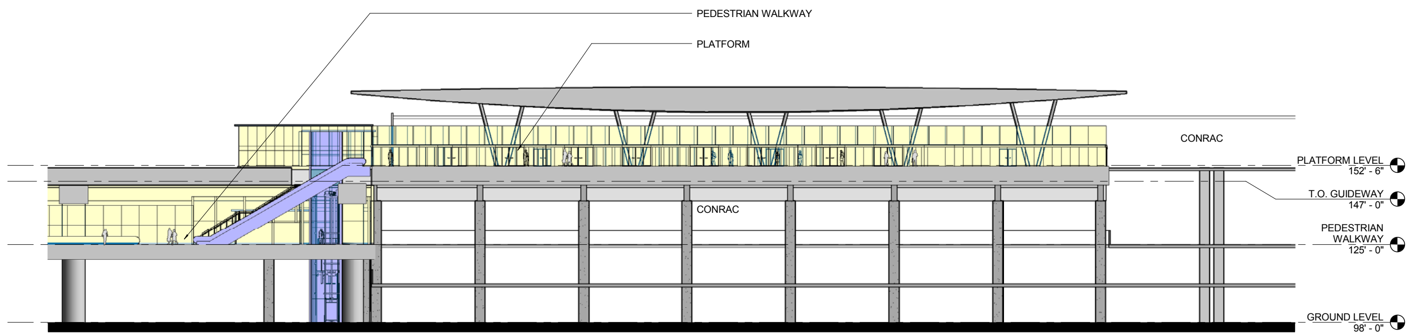
Access to the CONRAC for customers returning rental vehicles, employees, and visitors would be at the southwest corner of the Ready/Return garage and reached via eastbound and westbound W. 98th Street between extended Concourse Way and S. La Cienega Boulevard (see Figure 2-38). Wayfinding signs would direct customers returning rental vehicles to the level on which their particular rental car agency is located. Customers would use a ramp to Level 2 of the Ready/Return garage; a helix would provide access to Level 3. Employees and visitors would also use the helix to reach parking on Level 4. All rental car customers would exit the facility at the northwest corner of the Ready/Return garage, onto an internal circulation road. A signalized intersection at this roadway and W. Arbor Vitae Street would allow rental car customers to make right or left turns onto W. Arbor Vitae Street. No northbound or through movements from this street to north of W. Arbor Vitae Street would be allowed. Service access for the CONRAC, including maintenance vehicles, fueling and delivery trucks, and tractor-trailer car carriers, would be provided via southbound S. La Cienega Boulevard south of W. Arbor Vitae Street.



Floor Plan



North -SouthSection View



East-West Section View

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: MAPLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 2-40

CONRAC APM Station
Conceptual Floor Plan and Section Views

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2.4.3.4 Operations

The CONRAC facility would operate 24 hours per day, seven days per week. Passengers would access the CONRAC via the APM. The proposed CONRAC facility would include a commercial bus curb along the west side of the Ready/Return garage. Located at ground level, this curb would be used initially by a consolidated busing operation to bring CONRAC customers to and from the CTA prior to the opening of the APM (refer to Construction Phasing in Section 2.6.1). Customers would be dropped-off and picked-up at the bus curb and would access the CSB area, located on the fourth floor, via elevators and escalators. Once the APM becomes operational, this curb would be used by off-Airport rental car companies (any rental car company not located within the CONRAC serving airport passengers would be required to pick-up and drop-off passengers here) or other vehicles. Additionally, this curb would be used by shuttle buses to and from the CTA in the event that the APM is temporarily unavailable/offline.

2.4.4 ROADWAY IMPROVEMENTS

Improvements to roadways serving the CTA and the new proposed ITFs and CONRAC are an important component of the proposed Project. The proposed roadway improvements are designed to reduce congestion and enable passengers to more efficiently access LAX, provide direct connections from the local highways to the CONRAC and ITF East, and reduce traffic impacts to local communities.

The Airport access road system has been thoroughly analyzed to identify ways to encourage Airport passengers that would normally drive into the CTA to utilize the ITF East or ITF West instead, and to provide as convenient a connection as possible to the existing freeway system for rental car customers. These roadway improvements include improvements to the southbound I-405 ramps at S. La Cienega Boulevard and extension of W. 98th Street between S. La Cienega Boulevard and Bellanca Avenue. Proposed improvements would include, among others, new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, new or realigned driveways, roadway closures, streetscape improvements, landscaping, and intersection improvements. A summary of new roadways and roadway improvements included as part of the proposed Project is included in **Table 2-7**. **Figure 2-41** illustrates roadway improvements for areas in and around the CTA. As part of the improvements to roadway segments providing access into the CTA, LAWA may install security checkpoints. Roadway improvements in the area east of the CTA are shown on **Figure 2-42**. Roadway improvements would also occur in the southeast corner of the Airport area, the Imperial Highway/Aviation Boulevard intersection area, as shown on **Figure 2-43**.

[Draft]

Table 2-7 (1 of 3): Roadway Improvements

MAP KEY ID	ROADWAY SEGMENT	DESCRIPTION
1	West Way Relocation	Relocation of West Way 200 feet to the west
2	Improvements to Center Way	Shifting of some portions to allow construction of the APM
3	Sky Way/W. 96th Street Bridge Demolition	Closure and demolition of the Sky Way/W. 96th Street Bridge
4	Recirculation Ramps Demolition	Demolition of arrivals and departures levels recirculation ramps on the east end of the CTA
5	Demolition of W. Century Boulevard Eastbound Ramp	Demolition of the ramp from southbound Sepulveda Boulevard to eastbound W. Century Boulevard
6	New Ramps Arrivals and Departures from Southbound Sepulveda Boulevard	New ramps from southbound Sepulveda Boulevard to both the arrivals and departures level to replace the existing Sky Way Bridge
7	Demolition of W. Century Boulevard eastbound ramp	Removal of W. Century Boulevard between Sepulveda Boulevard and Sky Way to allow for southbound Sepulveda Boulevard ramps
8	Shift of Southbound Sepulveda Boulevard Lanes to the West	Shifting the southbound lanes of Sepulveda Boulevard between W. Century Boulevard and W. 96th Street by approximately 42 feet to the west
9	Demolition of Sepulveda Northbound Ramp	Demolition of the ramp from northbound Sepulveda Boulevard to westbound W. Century Boulevard/World Way
10	Vicksburg Avenue Demolition	Closure and demolition of Vicksburg Avenue between W. 98th Street and W. 96th Street
11	W. 96th Street Improvements	Reconfiguration of W. 96th Street between Sepulveda Boulevard and New ‘A’ Street to provide access to the ITF West
12	New Ramps to Connect to/from Century Boulevard	New ramps connecting W. 96th Street to the departures and arrivals levels of World Way
13	New Ramps to Arrivals and Departures from Century Boulevard to World Way	New ramps would be constructed from the W. Century Boulevard bridges to both the arrivals and departures levels
14	New Ramps from Arrivals and Departures to Southbound Sepulveda Boulevard	New ramps connecting the arrivals and departures levels to southbound Sepulveda Boulevard
15	New Ramps from Arrivals and Departures from World Way to Century Boulevard	New ramps from both the arrivals and departures levels to W. Century Boulevard
16	New Ramp from Northbound Sepulveda Boulevard to Eastbound W. Century Boulevard	A new ramp from northbound Sepulveda Boulevard to eastbound W. Century Boulevard
17	New Southbound Loop to Century Boulevard/World Way	A new roadway loop connecting northbound Sepulveda Boulevard to the elevated arrivals and departures ramps above New ‘A’ Street

Table 2-7 (2 of 3): Roadway Improvements

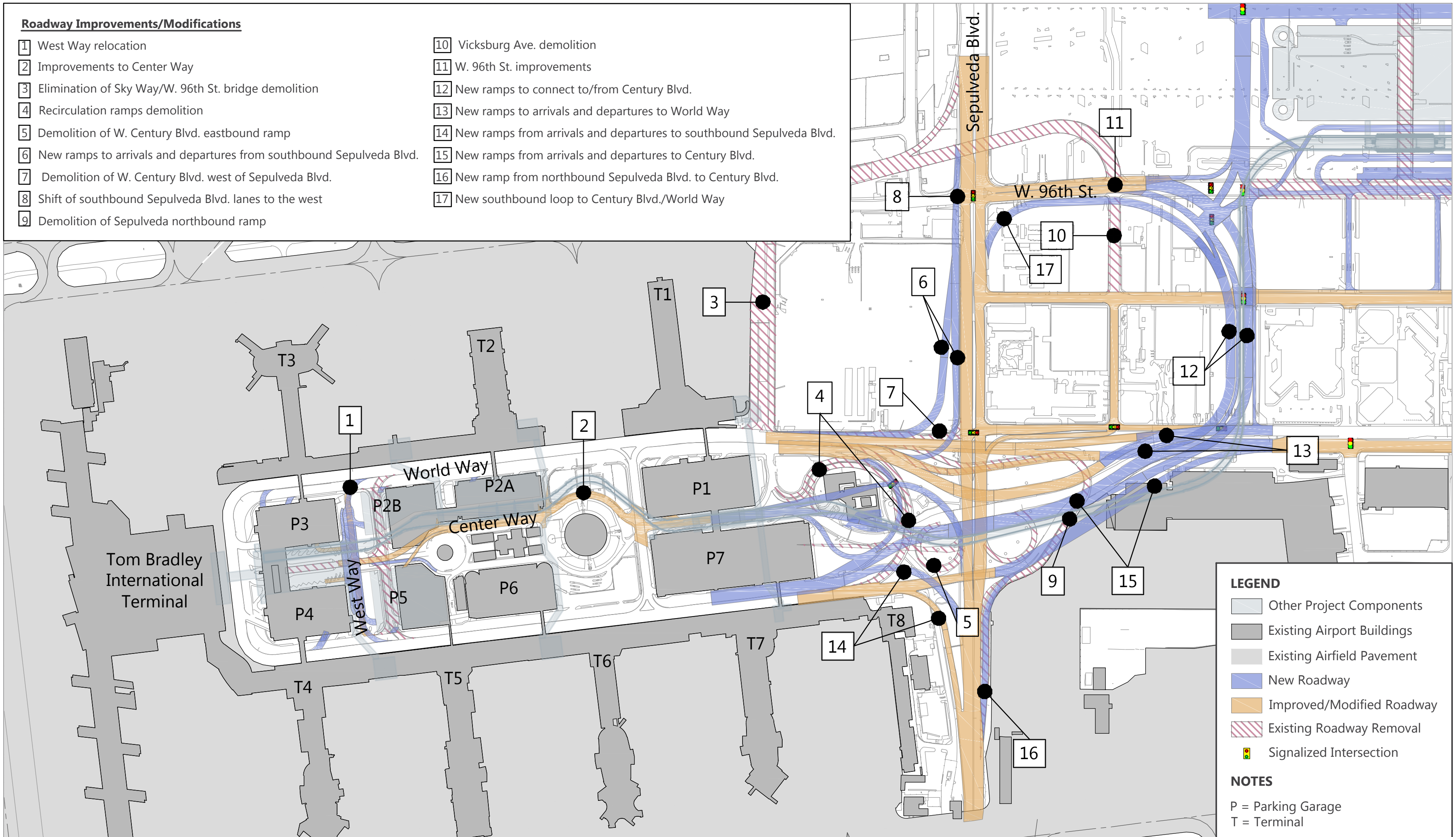
MAP KEY ID	ROADWAY SEGMENT	DESCRIPTION
18	New ‘A’ Street	A new roadway located between Century Boulevard and Westchester Parkway, parallel to Sepulveda Boulevard. This north-south roadway would consist of six lanes aerial on two viaducts and two southbound lanes at-grade.
19	New Intersection at ‘A’ Street and W. 96th Street	Addition of New ‘A’ Street and reconfiguration of W. 96th Street would result in a new intersection and new traffic pattern
20	W. 96th Street Closure	Closure and demolition of W. 96th Street between just east of Vicksburg Avenue and Airport Boulevard
21	Jenny Avenue Cul-de-Sac	Jenny Avenue north of Westchester Parkway would be closed and converted to a cul-de-sac
22	Demolition of Jenny Avenue	Closure and demolition of Jenny Avenue between Westchester Parkway and W. 96th Street
23	New ‘B’ Street	A new 4-lane roadway providing a connection between New ‘A’ Street and Airport Boulevard
24	New Access Roadways to ITF West	Three one-way, one-lane roadways would provide access to ITF West
25	W. 98th Street Improvements	Widen the existing roadway between New ‘A’ Street and Airport Boulevard to provide two lanes in each direction
26	Airport Boulevard Improvements	Widen the existing roadway between W. Arbor Vitae Street and W. 98th Street to provide an additional lane in each direction
27	New ‘D’ Street	A new 2-lane roadway located between W. 96th Street and W. Arbor Vitae Street
28	Demolition of Belford Avenue	Closure and demolition of Belford Avenue
29	W. 96th Street Improvements	Widening and restriping of the roadway between Airport Boulevard and Bellanca Avenue to maintain one lane in each direction and parking
30	W. Century Boulevard Improvements	Widen the roadway by 25 feet to the south to provide an additional eastbound lane between New ‘A’ Street and Aviation Boulevard
31	W. 98th Street Extension	Would provide through access of 98th Street between Aviation Boulevard and Bellanca Avenue
32	Aviation Boulevard Improvements	Widen the roadway between W. Century Boulevard and W. Arbor Vitae Street in order to provide an additional lane in each direction
33	New 98th Street Segment	A new roadway located between Aviation Boulevard and S. La Cienega Boulevard, parallel to W. Century Boulevard. This east-west roadway would consist of two lanes in each direction.

[Draft]

Table 2-7 (3 of 3): Roadway Improvements

MAP KEY ID	ROADWAY SEGMENT	DESCRIPTION
34	Extended Concourse Way	A new roadway located between W. Century Boulevard and W. Arbor Vitae Street, parallel to S. La Cienega Boulevard. This north-south roadway would consist of two lanes in each direction.
35	Demolition of Secondary Roadways in Manchester Square	Closure and demolition of secondary roadways within Manchester Square
36	W. 98th Street Underpass	An underpass beneath W. 98th Street to provide an entrance into the CONRAC for eastbound traffic
37	S. La Cienega Boulevard Improvements	Widen the roadway to provide an additional lane in each direction between W. 98th Street and W. Arbor Vitae Street
38	I-405 Off-Ramp Improvements	Widen the existing off-ramp to provide two additional lanes to allow traffic to flow across S. La Cienega Boulevard and onto the new W. 98th Street segment and to the CONRAC entrance
39	W. Arbor Vitae Street Improvements	Widen the roadway between Aviation Boulevard and S. La Cienega Boulevard in order to provide an additional lane in each direction
40	New Access Roadways to the ITF East	Three access drives would provide a connection from Aviation Boulevard to the ITF East
41	W. 111th Street Improvements	Widening of W. 111th Street on the south side between Aviation Boulevard and New ‘C’ Street to provide an additional lane in each direction and turn lanes
42	New ‘C’ Street	A new roadway located between Imperial Highway and W. 111th Street, parallel to Aviation Boulevard. This north-south roadway would consist of two lanes in each direction.
43	I-105 Ramp Improvements	Improvements to allow dual left turn lanes, a through lane to the New ‘C’ Street, and a shared through-right turn lane

SOURCE: MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., March 2016.



NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH

0 750 ft.

FIGURE 2-41

Roadway Improvements
Central Terminal Area

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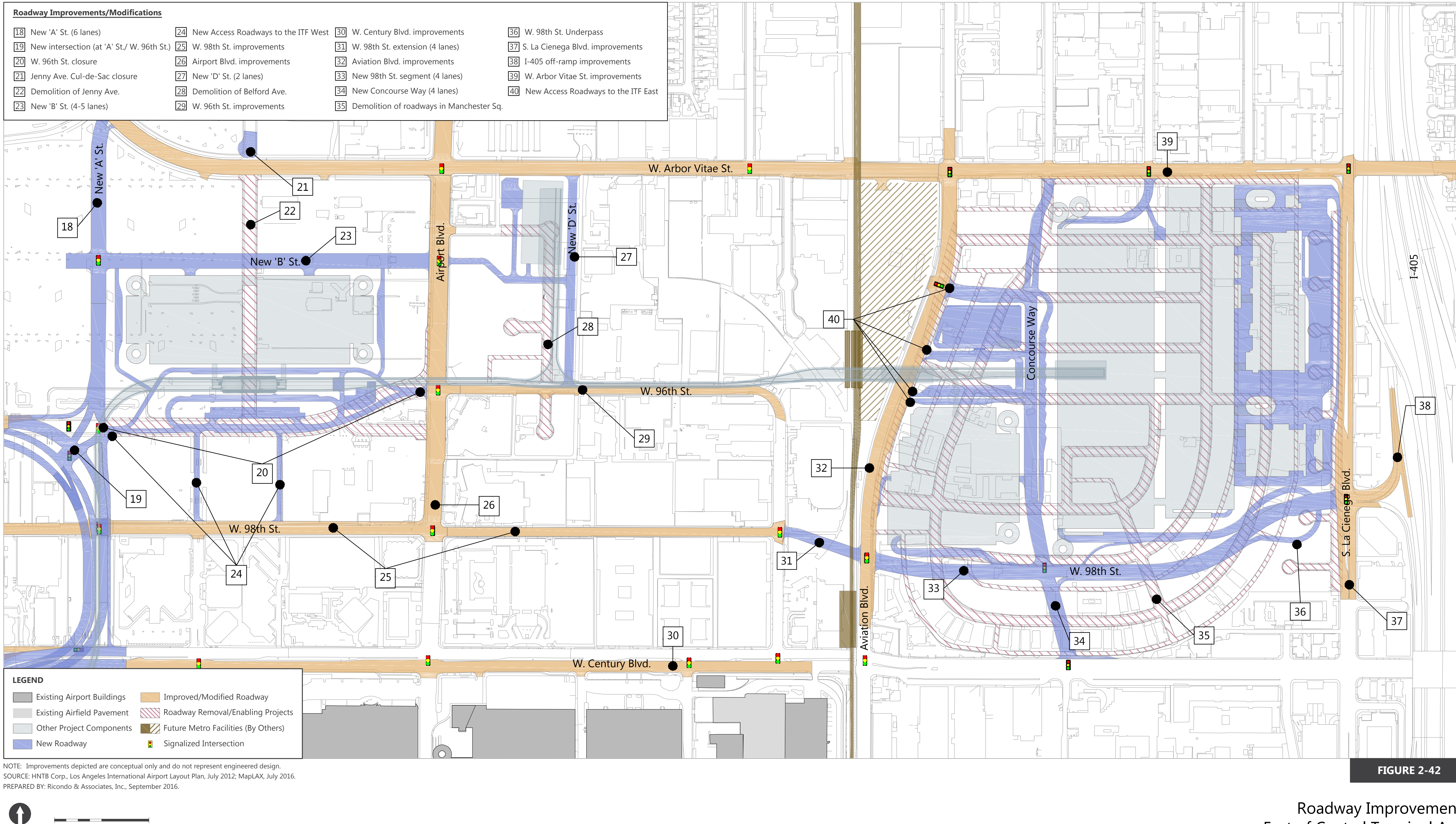

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-42

Roadway Improvements
East of Central Terminal Area

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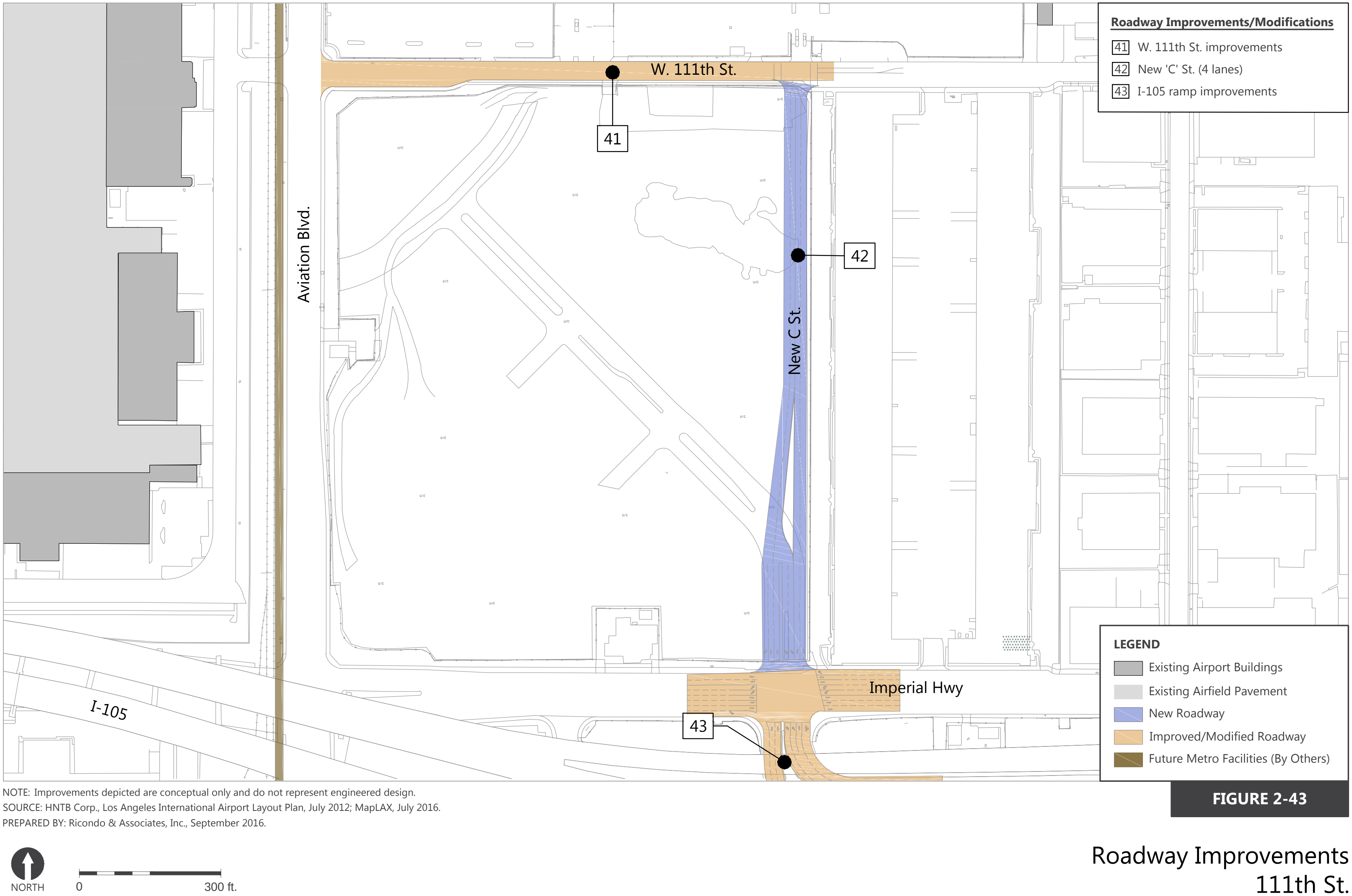

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-43

Roadway Improvements
111th St.

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Table 2-8 provides the existing dimensions of the sidewalk, roadway, and right-of-way for the major streets proposed to be improved as part of the Project, along with roadway classifications per the *Mobility Plan 2035* and proposed roadway classifications. The table also compares the sidewalk, roadway, and right-of-way dimensions for each roadway per *Mobility Plan 2035* classification along with the Project's proposed sidewalk, roadway, and right-of-dimensions.

The LAX Landside Access Modernization Program Project proposes to restripe the W. 98th Street segment from Airport Boulevard to Bellanca Avenue to four travel lanes, two lanes in each direction. Operational options of the W. 98th Street travel corridor between Airport Boulevard and Bellanca Avenue were identified to address local business concerns. In collaboration with the Gateway to LA Airport Business Improvement District, LAWA will continue to study and implement operational options, including the conversion of 98th Street between Airport Boulevard and Bellanca Avenue to four lanes: two lanes westbound, one lane eastbound and one loading lane on the south side of the street that would become an eastbound lane during evening peak periods. Additionally, as part of the operational option, a loading management zone would be provided on the north side along the Belford Property with access off W. 96th Street. In consultation with area stakeholders, LAWA will select the operational option that meets Airport and local business needs.The proposed LAX Design Guidelines (see Appendix B) include guidelines for roadways and streetscapes that would apply to the proposed roadway improvements. The guidelines cover sidewalks, street trees, landscaping, hardscape material pallettes, street furniture and lighting. Proposed cross-sections for the roadways identified in Table 2-8 are included in Chapter 3 of the proposed LAX Design Guidelines.

Implementation of the proposed Project would change traffic patterns at the intersection of W. Century Boulevard and Sepulveda Boulevard, which may affect the existing pedestrian route into the CTA to accommodate the changes in the access road system. Currently, pedestrians can cross Sepulveda Boulevard to walk into the CTA or walk down W. Century Boulevard to the office buildings and hotels located east of the CTA. LAWA would preserve a pedestrian connection between the CTA and W. Century Boulevard as part of the proposed Project, through either an at-grade crossing or future pedestrian bridge.

The proposed LAX Design Guidelines also identifies proposed bike paths for some segments of the proposed roadway improvements. **Table 2-9** identifies the proposed roadway segments and bike lane type and dimensions under the proposed Project.

Table 2-8 (1 of 2): Project Dimensions for Streets

	CURRENT DIMENSIONS[1/] (TYPICAL)			PROPOSED DESIGNATION PER CITY OF LOS ANGELES MOBILITY ELEMENT 2035[4/]	PROPOSED DIMENSIONS PER MOBILITY ELEMENT 2035[4/] PROPOSED PER STREETSCAPE PLAN			PROPOSED DIMENSIONS PER LAX LANDSIDE ACCESS MODERNIZATION PROGRAM ROADWAY PLAN		
STREET NAME	**SIDEWALK[2/]**	**ROADWAY[3/]**	**ROW**	**(LAX DESIGN GUIDELINES PROPOSED DESIGNATION)**	**SIDEWALK[2/]**	**ROADWAY**	**ROW**	**SIDEWALK[2/]**	**ROADWAY[3/]**	**ROW[6/ 7/]**
CENTURY BLVD. Avion Dr. to Airport Blvd.	10′	113′ to 129′ [3/]	133′ to 149′	Boulevard I (Modified)	18′	100′	136′	18′ to 20′[6/]	128′	138′
CENTURY BLVD. Airport Blvd. to Aviation Blvd.	10′	113′ [3/]	133′	Boulevard I (Modified)	18′	100′ 124′	136′ 133′	20′ to 25′[6/]	128′	138′
98TH STREET New 'A' Street to Airport Blvd.	8′	57′	73′	Collector Street (Modified)	13′	40′	66′	15′	70′	100′
98TH STREET Airport Blvd. to Aviation Blvd.	7′ to 8′	45′ to 49′	60′ to 66′	Collector Street (Modified)	13′	40′	66′	15′	70′	100′
98TH STREET Aviation Blvd. to La Cienega Blvd.	N/A	N/A	N/A	New Street - (Avenue I)	N/A	N/A	N/A	15′	70′	100′
WESTCHESTER PKWY New 'A' Street to Airport Blvd.	10′	80′	100′	Boulevard II (Modified)	15′	80′	110′	15′	94′	124′
ARBOR VITAE STREET Airport Blvd. to Aviation Blvd.	10′	64′	84′	Boulevard II (Modified)	15′	80′	110′	12′ to 15′	69′ to 74′	96′ to 101′

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Table 2-8 (2 of 2): Project Dimensions for Streets

STREET NAME	CURRENT DIMENSIONS[1/] (TYPICAL) SIDEWALK[2/]	ROADWAY[3/]	ROW	PROPOSED DESIGNATION PER CITY OF LOS ANGELES MOBILITY ELEMENT 2035[4/] (LAX DESIGN GUIDELINES PROPOSED DESIGNATION)	PROPOSED DIMENSIONS PER MOBILITY ELEMENT 2035[4/] PROPOSED PER STREETSCAPE PLAN SIDEWALK[2/]	ROADWAY	ROW	PROPOSED DIMENSIONS PER LAX LANDSIDE ACCESS MODERNIZATION PROGRAM ROADWAY PLAN SIDEWALK[2/]	ROADWAY[3/]	ROW[6/ 7/]
ARBOR VITAE STREET Aviation Blvd. to La Cienega Blvd.	10′	55′ (excludes frontage road)	75′ to 115′	Boulevard II (Modified)	15′	80′	110′	10′ to 25′[6/]	80′	105′
NEW ‘A’ STREET 98th St. to Westchester Parkway	N/A	N/A	N/A	New Street - (Avenue I)	N/A	N/A	N/A	15′	70′	100′
AIRPORT BLVD. 98th St. to W. Arbor Vitae St.	10′ to 16′ West 10′ East	72′	98′	Boulevard II (Modified)	15′	80′	110′	18′	104′	140′
AVIATION BLVD. 98th St. to W. Arbor Vitae St.	12′	102′	126′	Boulevard II (Modified)	15′	80′	110′	12′ to 25′	83′ to 89′	120′ to 129′

NOTES:

1/ The range indicated is the range of existing dimensions. All dimensions are approximate and should be field verified and should not be used for engineering purposes. City of Los Angeles, Department of Transportation signing and striping plans, GIS parcel maps, and Google aerials were used for pavement, sidewalk/pavement widths, and right-of-way.

2/ Includes both sidewalk and tree well or parkway area.

3/ Includes landscaped median.

4/ Adopted January 20, 2016.

5/ Includes 28′ frontage road and 4′ raised island.

6/ Easements required.

7/ Excluding easements.

SOURCE: MapLAX, July 2016
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Table 2-9: Proposed Bike Lanes

ROADWAY SEGMENT	TYPE OF BIKE LANE	BIKE LANE WIDTH (FT)
Century Boulevard (Airport Boulevard to Aviation Boulevard)	Multi-Use Path	19
Westchester Parkway (New 'A' Street to Airport Boulevard)	Protected Bike Lane	5
Arbor Vitae Street (Aviation Boulevard to La Cienega Boulevard)	Multi-Use Path	19
Airport Boulevard (W. 98th Street to Arbor Vitae Street)	Bike Lane	5 (each side of street)
Aviation Boulevard (W. 98th Street to Arbor Vitae Street)	Multi-Use Path	17 - 24

SOURCE: MapLAX, July 2016
PREPARED BY: Ricondo & Associates, Inc., August 2016.

2.4.5 UTILITIES

Utilities improvements are required to support the operations of the proposed Project facilities. In addition, the relocation of existing utility lines affected by construction of the proposed Project would also be required, as discussed in Section 2.5, *Enabling Projects*. The proposed Project would include new buildings and facilities generally located to the east of the CTA (see Figure 2-4), requiring new utility connections for their operations. Such connections may require some level of new infrastructure within the adjacent roadways, depending on the quantity and quality of existing service. Each of the buildings would require new and/or upgraded reclaimed water, power, storm and wastewater drains, natural gas, communications, and other related utility services.

Utility improvements necessary to serve the proposed facilities include domestic water, fire water, chilled water and heated water, reclaimed water, electrical and communication systems, natural gas and fuel systems, stormwater, and wastewater drainage systems. Detailed utility demand requirements are discussed in Section 4.13, *Utilities and Service Systems*. Specific facilities for the proposed Project include:

- In addition to the TPSSs discussed in Section 2.4.1.2.4, the proposed Project would include Los Angeles Department of Water and Power (LADWP) electrical industrial stations to supply power (connected load) at the MSF and the CONRAC.
- LAWA's water conservation and management programs include use of recycled water for landscape irrigation; management of stormwater runoff; and protection of groundwater resources. All water fixtures installed as part of the proposed Project would be low-flow, water-conserving devices. Any Project-related irrigation system would be monitored and controlled through a centralized computer irrigation control center to assist in conserving water resources.
- LADWP currently supplies LAWA with recycled water for landscape irrigation at multiple locations. The largest area currently using recycled water is along Westchester Parkway/W. Arbor Vitae Street. Any proposed landscaped areas that require irrigation that would be implemented as part of the proposed Project would be required to use recycled water. Additionally, recycled water may be used for APM train car washing at the MSF and for vehicle washing at the CONRAC.

- As part of an update to the existing Conceptual Drainage Plan for LAX, LAWA would integrate the applicable Best Management Practices (BMP) requirements related to the County's Standard Urban Stormwater Mitigation Plan (SUSMP) and the City's Low Impact Development (LID) Ordinance into the design of the ITFs, CONRAC, and APM MSF. The overall BMP program for the proposed Project would be sized to meet the LID specifications relative to addressing runoff volumes for the 85th percentile storm event.
- The CONRAC plans include approximately 500,000 cubic feet of cisterns to retain flows from the 85th percentile storm event. The cisterns would be sized primarily to address potential water quality impacts and storing/retaining stormwater to reduce peak flows. Distribution of the proposed cistern volumes assumes approximately 25 percent of the CONRAC runoff would be directed to cisterns located in the northern portion of the CONRAC site, while 75 percent would be directed to the southern portion of the CONRAC site. The cisterns would retain 111,000 ft^3 in the northern drainage area of the facility and 389,000 ft^3 in the southern drainage area. This collected stormwater, when available, would be treated onsite via reverse osmosis and used to supplement water supplies for car washing purposes. Currently, LADWP provides reclaimed water to the eastern portion of the Project area from the Hyperion Wastewater Treatment Plant (HWTP). At present, this water does not meet water quality requirements necessary for application in the proposed car wash system, as there is a high concentration of total dissolved solids (TDS) and has some odor.
- LAWA has enacted an alternative fuels conversion policy that applies to all on-road vehicles weighing 8,500 pounds or larger. This policy requires alternative-fuel conversion of rental car company courtesy shuttles, trucks and other large vehicles in use at LAX. As such, alternative fueled vehicles would be required for any consolidated rental car shuttle buses.
- The CONRAC facility would require on-site fueling facilities to service the various rental car companies. The estimated daily fuel requirements of the CONRAC are approximately 30,000 gallons per day. Fuel would be stored on-site in underground fuel storage tanks and would be dispensed through standard fleet gasoline dispensing equipment.
- The proposed Project would meet the energy efficiency and water efficiency and conservation requirements of the Los Angeles Green Building Code (LAGBC) (Chapter IX, Article 9 of the Los Angeles Municipal Code).

2.4.6 TRANSPORTATION POLICIES AT LAX

In addition to the proposed Project components described above, LAWA would establish policy changes to fees, pricing, licenses, traffic patterns, and agreements with various commercial vehicle operators at LAX, as well as fees and prices for parking at LAX facilities as part of the proposed Project. Additionally, LAWA may implement tolls for commercial vehicle operators and potentially to the public to access Airport facilities if needed to manage traffic during peak periods and for incident management.

2.4.6.1 Commercial Vehicle Ground Transportation Permit Program

On September 2, 1987, the LAWA BOAC approved a resolution approving a ground transportation permit program, rules and regulations governing this program, and authorization for LAWA to execute Non-Exclusive License Agreements (NELA), and issuance of vehicle permits to operators of commercial vehicles transporting passengers to and from LAX. NELAs are routinely issued to qualified operators of Charter Party Carrier Transportation and Courtesy Vehicle Transportation Services to and from LAX.

LAX is currently served by over 3,400 authorized Charter Party and Courtesy operators. In fiscal year 2014-15, more than 590 NELAs were issued. Each operator must satisfy all application requirements, which include applicable California Public Utilities Commission authority, City Business Tax Registration, LAWA Insurance, and Department of Motor Vehicles registration. Each operator is required to abide by all LAX Rules and Regulations while operating at LAX. LAWA also has concession agreements with Commercial Ground Transportation (CGT) vehicles, which include taxis, rental car agency shuttles, hotel shuttles, off-airport parking shuttles, and shared ride vans, who must also satisfy similar requirements.

To reduce congestion on the CTA roadways, LAWA would update the LAX Ground Transportation Permit Program to allow and/or require commercial operators to pick-up and drop-off passengers at the ITF East and ITF West. Concurrently, LAWA would restrict access to the CTA for some commercial operators. LAWA would also institute pricing differential strategies to encourage commercial vehicle operators to pick-up and drop-off passengers at the ITF East and the ITF West.

2.4.6.2 Traffic Management

The current LAX Ground Transportation Permit Program permits and regulates the pick-up activities of commercial operators, including taxis, shared ride vans, scheduled service buses, courtesy shuttles (hotel, private parking, and rental car), and pre-arranged charter carriers. Approximately 34 percent of all departing air passengers used charter vehicles, taxis, limousines, shuttles, or TNCs such as Uber or Lyft to get to LAX in 2015.[26]

During construction, private vehicle operators would be encouraged to be flexible and make use of off-peak curbside times. Drivers would also be encouraged to use the Departures level during the Arrivals level peak. Making use of kiss-and-ride, remote passenger pick-up, and restricting vehicle recirculation within the CTA are all strategies that would alleviate roadway and curbside congestion. LAWA would use differential pricing strategies to encourage passengers to pick-up and drop-off passengers or to park their vehicles at the ITF East and the ITF West. These strategies could include lower parking rates compared to the parking garages located within the CTA, free or reduced-fee parking for a limited amount of time for people waiting to pick-up passengers, cell-phone waiting areas, and/or instituting tolls during peak periods for vehicles entering the CTA.

With implementation of the proposed Project, changes to the LAX Ground Transportation Permit Program, and implementation of pricing differential strategies, LAWA would manage the Project facilities to induce future daily passenger mode share shifts, with most commercial vehicle operators picking-up and dropping-off passengers at the ITF East and ITF West. LAWA would manage the facilities and Airport traffic to effectuate a shift of up to approximately 49 percent of the Airport passenger pick-up and drop-off from the CTA to the ITF East, ITF West, and CONRAC.

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[26] Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings*, February 2016.

2.4.6.2.1 ITF West Traffic Management

The ITF West would be designed to provide access and staging areas for a variety of Airport users including, but not limited to, hotel shuttles, charter vans, paid rides, transit buses, taxis and limousines, as well as provide parking for travelers and visitors to the Airport and access to the APM. In order to reduce congestion on the CTA roadways, LAWA is anticipating changing the LAX Ground Transportation Permit Program and NELAs to allow commercial operators to pick-up and drop-off passengers at the ITF West. Concurrently, LAWA would restrict access to the CTA for some classes of commercial operators such as shared ride vans, scheduled service buses, courtesy shuttles, and pre-arranged charter carriers. LAWA would also institute other policy changes, including reclassification and pricing differential strategies that would result in other commercial vehicle operators such as taxis, limousines, and Transportation Network Companies (e.g., Uber and Lyft) utilizing ITF West.

Additionally, LAWA would implement differential pricing and other strategies to encourage passengers, meet-and-greeters, and well-wishers to utilize the ITF West to access the Airport instead of driving into the CTA. These strategies could include lower parking rates compared to the parking garages located within the CTA, free parking for a limited amount of time for people waiting to pick-up passengers, and cell-phone waiting areas.

2.4.6.2.2 ITF East Traffic Management

The ITF East is planned primarily for use by private and commercial vehicles that are traveling to/from the Airport from the freeway system, or via W. Century Boulevard, Aviation Boulevard, and W. Arbor Vitae Street. The purpose of the ITF East is to provide a connection to transfer passengers from personal, commercial, and transit vehicles to and from the APM station for access to the CTA and Airport passenger terminals, as well as to the proposed Metro AMC 96th Street Transit Station. The ITF East would be designed to provide access and staging areas for a variety of transportation modes, including, but not limited to, FlyAway buses, charter buses, shared ride vans, charter vans, paid rides, taxis and limousines, and transit buses, as well as provide parking for travelers and visitors to the Airport and access to the APM. In order to reduce congestion on the CTA roadways, LAWA is anticipating changing the LAX Ground Transportation Permit Program and NELAs to allow commercial operators to pick-up and drop-off passengers at the ITF East. Concurrently, LAWA would restrict access to the CTA for some classes of commercial operators such as shared ride vans, scheduled service buses, courtesy shuttles, and pre-arranged charter carriers. LAWA would also institute pricing differential strategies to encourage other commercial vehicle operators such as taxis, limousines, and Transportation Network Companies (e.g., Uber and Lyft) to pick-up and drop-off passengers at the ITF East.

Additionally, LAWA would implement differential pricing strategies to encourage passengers to pick-up and drop-off passengers or park their vehicles at the ITF East. These strategies could include lower parking rates compared to the parking garages located within the CTA, free parking for a limited amount of time for people waiting to pick-up passengers, and cell-phone waiting areas.

2.4.6.2.3 Transportation System Management

Another tool that LAWA may implement is the use of Intelligent Transportation Systems (ITS) or Adaptive Traffic Control Systems (ATCS) to monitor and improve the flow of traffic along key north-south airport access routes, which may include corridors through neighboring jurisdictions such as Culver City and El Segundo. ITS could be utilized to provide real-time information to passengers to inform their Airport access and mode choices. ITS has been tested and implemented along major travel corridors in numerous major metropolitan areas including the City of Los Angeles, County of Los Angeles and others. This enhanced traffic control system includes a computer-based traffic signal control program that provides fully responsive traffic signal control based on real-time traffic conditions. It automatically adjusts and optimizes traffic signal timing in response to current traffic demands on the entire signal network such that the number of stops and the amount of delay is minimized along with improved traffic signal coordination throughout the network including the immediate vicinity of the Airport. The ITS data would also be used to implement the construction traffic management plans, manage Airport commercial and transit vehicles and provide real-time data to passengers, employees and other Airport users.

An ITS is a fully responsive, real-time system. In order for that to be achieved, it must be provided with sufficient data to be effective and to make appropriate decisions regarding signal timing. Therefore, ITS would require additional vehicle sensors; computer hardware and networking; and an upgrade in the communication system. The ideal system design would have vehicle sensors on all approaches to all intersections in the sub-system. With the pertinent traffic data (number of vehicles) obtained from these sensors placed in advance of the intersections, the signal timing is adjusted to accommodate the prevailing conditions.

2.4.7 SUSTAINABILITY

LAWA has developed a set of sustainability guidelines for 'green' measures to be incorporated into the design, construction, and operations of each proposed Project component. These guidelines align with LAWA's commitment to sustainability at LAX, as well as Mayor Garcetti's Sustainable City pLAn.[27] These sustainability guidelines serve as a mechanism to promote LAWA's commitment to reduce its environmental footprint and promote energy efficient design requirements, water conservation and water quality improvement projects, natural resource protection efforts, waste reduction and recycling, and numerous air quality emissions reduction policies and programs.

LAWA has based its new sustainable construction standards on the mandatory and voluntary tiers defined in the LAGBC.[28] LAWA requires that all Airport building projects with a City of Los Angeles Department of Building and Safety (LADBS) permit-valuation over $200,000 shall achieve LAGBC Tier 1 conformance, to be

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27 City of Los Angeles, *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.

28 City of Los Angeles, *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.

certified by LADBS during final plan check (on the issued building permit) and validated by the LADBS inspector during final inspection (on the Certificate of Occupancy).[29][30] Tier 1 refers to specific practices that are to be incorporated into projects to "achieving enhanced construction levels by incorporating additional green building measures."

In addition to conformance with LAGBC Tier 1 standards, LAWA has committed to additional sustainability measures, including energy and water conservation measures, for each of the follow proposed Project components: APM guideway and stations, the APM MSF, the ITFs, and the CONRAC, which are contained in the LAX Design Guidelines (see Appendix B).

2.4.7.1 APM Guideway and Stations

LAWA will encourage the design team to include several sustainability measures into the design of the APM guideway and stations. For example, the APM guideway and stations should be constructed using locally sourced, bio-based, and recycled content products. To achieve energy use reduction, passive strategies taking advantage of the favorable local climate for natural daylighting and naturally ventilated and unconditioned spaces should be incorporated into the APM stations, with the exception of the West CTA APM Station, which would be conditioned.[31] Stations including restroom or concession facilities should also incorporate water efficiency and conservation measures, including water conserving fixtures and fittings.

2.4.7.2 APM Maintenance and Storage Facility

The APM MSF would include both maintenance and office spaces, allowing for a variety of sustainability measures. Water efficiency and conservation measures would be implemented for employee locker rooms as well as APM train washing operations. Parking areas beneath the facility may also be a good candidate for permeable pavement options, complying with LID ordinances. Heat island impacts would be reduced by using cool roof materials and light colored (high albedo) construction materials. Hardscape areas would be reduced by increasing landscaped areas where possible. Landscaped areas would serve to reduce heat island effects while also functioning as storm water detention and treatment areas.

2.4.7.3 Intermodal Transportation Facilities

The ITFs would be designed as fully intermodal facilities, including bicycle and pedestrian access. Therefore, these facilities would provide bicycle parking and changing/shower facilities. The proposed ITFs would also provide preferred parking spaces for low-emitting, fuel-efficient, and carpool/van pool vehicles. At least 10 percent of the total parking structure spaces would be capable of supporting installation of future electric vehicle charging stations. On-site solar electricity generation would be implemented in accordance with FAA

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29 City of Los Angeles, Ordinance No. 181,480, (Los Angeles Municipal Code, Chapter IX, Article 9, Green Building Code), November 30, 2010.

30 City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.

31 Unconditioned means that the space is not mechanically heated or air conditioned; conditioned means that the space would be mechanically heated and/or air conditioned.

glare guidance, as applicable. The use of solar canopies may be used as shade structures in addition to roof-mounted solar arrays.

2.4.7.4 CONRAC

In addition to Tier 1 conformance, the CONRAC would also be designed and constructed to achieve LEED® Silver certification. Specific measures to achieve this goal include:

- Providing a minimum of a 7 megawatt (MW) roof-mounted solar array.
- 10 percent electric vehicle charging stations for public, employee, and visitor parking spaces and capacity for an additional 10 percent future charging stations would be provided in these areas.
- The implementation of either xeriscaping or “purple pipe” recycled water for landscaping elements.
- The use of reverse osmosis reject water for car washing rinse cycles.
- Increased air quality from the use of Minimum Efficiency Reporting Value (MERV) 13 filters and no added formaldehyde materials.

2.5 Enabling Projects

Construction of the proposed Project would require demolition of several existing facilities, some of which would be reconstructed. **Table 2-10** provides an overview of the facilities affected by the proposed Project, including the name, size, and disposition of each facility; additional discussion of each facility is provided below. **Figure 2-44** delineates the existing and potential future locations of the affected facilities.

2.5.1 DEMOLITION/RECONSTRUCTION OF CTA PARKING GARAGES

Three parking garages within the CTA would be demolished and reconstructed (see item 1 on Figure 2-44). Additional information for each garage is included below.

2.5.1.1 Parking Garage P2A

Parking Garage P2A is located within the CTA, directly south of Terminal 2. The current parking structure is 5 levels (approximately 60 feet in height) with a footprint of approximately 77,600 sq. ft., and serves both public and tenant parking with a total of 766 parking spaces. This parking garage is located within the footprint of the proposed APM guideway, and would therefore need to be demolished to enable construction of the proposed Project. To maintain availability of parking within the CTA, Parking Garage P2A would be reconstructed in generally the same location with 6 levels (approximately 70 feet in height). The reconstructed garage would have a footprint of approximately 50,000 sq. ft. and would provide approximately 775 spaces, adding approximately 9 net new parking spaces.

Table 2-10 (1 of 2): Summary of Enabling Projects

MAP ID #	FACILITY	APPROXIMATE FOOTPRINT AREA	CURRENT USE	DISPOSITION OF FACILITY/USE
1	Parking Garage P2A	77,600 sq. ft.	Parking Structure	Existing parking garage would be demolished and a replacement garage would be constructed in the CTA.
1	Parking Garage P2B	64,500 sq. ft.	Parking Structure	Existing parking garage would be demolished and a replacement garage would be constructed in the CTA.
1	Parking Garage P5	69,200 sq. ft.	Parking Structure	Existing parking garage would be demolished and a replacement garage would be constructed in the CTA.
2	Clifton Moore Administration Building (1 World Way)	34,200 sq. ft.	LAWA Administrative Offices	Building would be demolished and LAWA administrative offices would be relocated to the existing LAWA-owned Skyview Center located at 6033 and 6053 W. Century Boulevard.
3	Bob Hope Hollywood USO	4,000 sq. ft.	Provides services to military personnel	Building would be demolished. Existing uses would be accommodated in the ground floor of the Theme Building.
4	Restaurant Building	5,100 sq. ft.	Fast food facility	Building would be demolished.
5	LAX City Bus Center	84,300 sq. ft.	Regional bus transportation center	Transportation center would be demolished and relocated either to the proposed Metro AMC 96th Street Transit Station to be constructed adjacent to the ITF East or adjacent to the Aviation/Century Boulevard station of the Metro Crenshaw/LAX Line currently under construction.
6	Delta Hangar Complex	182,500 sq. ft.	Light maintenance of aircraft	Buildings would be demolished. Replacement facilities would be constructed on-Airport property.
7	Reliant Medical Center	30,600 sq. ft.	Provides urgent medical care to the public	Building would be demolished. Existing uses could be accommodated either on-Airport property or elsewhere.
8	Jenny Avenue	100,000 sq. ft.	Roadway providing a connection between Westchester Parkway and W. 96th Street and parking areas in between	The existing roadway would be closed and demolished. See Section 2.4.4.
9	W. 96th Street	215,000 sq. ft.	Roadway providing a connection between Vicksburg Avenue and Airport Boulevard and adjacent facilities	The existing roadway would be closed and demolished. See Section 2.4.4.
10	Belford Area Secondary Roadways	104,000 sq. ft.	Roadways providing access to residential areas within the Belford Area	The existing secondary roadways would be closed and demolished. See Section 2.4.4.
11	Manchester Square Secondary Roadways	1,300,000 sq. ft.	Roadways providing access to residential areas within Manchester Square	The existing secondary roadways would be closed and demolished. See Section 2.4.4.
12	Drug Enforcement Administration Building/Trailer	5,000 sq. ft.	Offices for Drug Enforcement Administration personnel	Building/trailer would be removed. Existing uses would be accommodated elsewhere on-Airport property.

[Draft]

Table 2-10 (1 of 2): Summary of Enabling Projects

MAP ID #	FACILITY	APPROXIMATE FOOTPRINT AREA	CURRENT USE	DISPOSITION OF FACILITY/USE
13	Operations Trailers	2,800 sq. ft.	Offices for Airport Operations	Trailers would be removed. Operations would be consolidated to existing facilities on-Airport property.
14	Airport Century Inn (Travelodge)	65,900 sq. ft.	Hotel	If current lease is not renewed (expires in April 2018), LAWA would demolish the hotel for use as construction staging. Would be impacted by Aviation Boulevard improvements that would most likely occur after 2020.
15	Sky Way/W. 96th Street Bridge	281,800 sq. ft.	Provides access to the CTA	The existing bridge would be demolished and removed.
16	Center Way	110,000 sq. ft.	Provides access within the CTA	Improvements to the existing Center Way roadway to allow for other Project-related improvements within the CTA. See Section 2.4.4.
17	West Way	40,900 sq. ft.	Roadway providing a connection between the north and south branches of World Way	The existing roadway would be demolished and relocated 200 feet to the west. See Section 2.4.4.
18	Various Properties and Billboards within the Project Area	12.6 acres 1/	Varies by location, see Table 2-11.	Varies by location (see Table 2-11). Existing facilities would be acquired and demolished.
19	Remaining Properties in Manchester Square	12.2 acres 2/	Single- and multi-family residences	The remaining 37 properties in Manchester Square would be acquired through LAWA's Aircraft Noise Mitigation Program.
20	Stella Middle Charter Academy and Bright Star Secondary Charter Academy	24,000 sq. ft.	Charter schools	The two schools would be relocated off-Airport property to a permanent facility. Modular facilities may be constructed on the Northside Improvements area for temporary operations until the schools have secured a permanent location.
N/A	Utility Relocation	N/A	Utilities providing power, water, sewer and others to the Project site and surrounding areas	Existing utilities located within and adjacent to roadways would be relocated or abandoned.
	Existing Rental Car Facilities	N/A	Operations of rental car facilities including maintenance	Rental car agencies have indicated that in the short-term, existing rental car facilities would remain and continue to be used for vehicle storage, administrative functions, and heavy maintenance. Long-term disposition of privately-owned property would be up to each respective agency.

NOTES:

N/A = Not Available

USO = United Service Organizations

1/ The cumulative total for all properties to be acquired.

2/ The cumulative acreage for all properties to be acquired in Manchester Square.

SOURCE: MapLAX, *Los Angeles International Airport Landside Access Modernization Program, Program Brief*, January 2016; HNTB, *Airport Layout Plan*, July 6, 2012.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

Facilities to be Removed

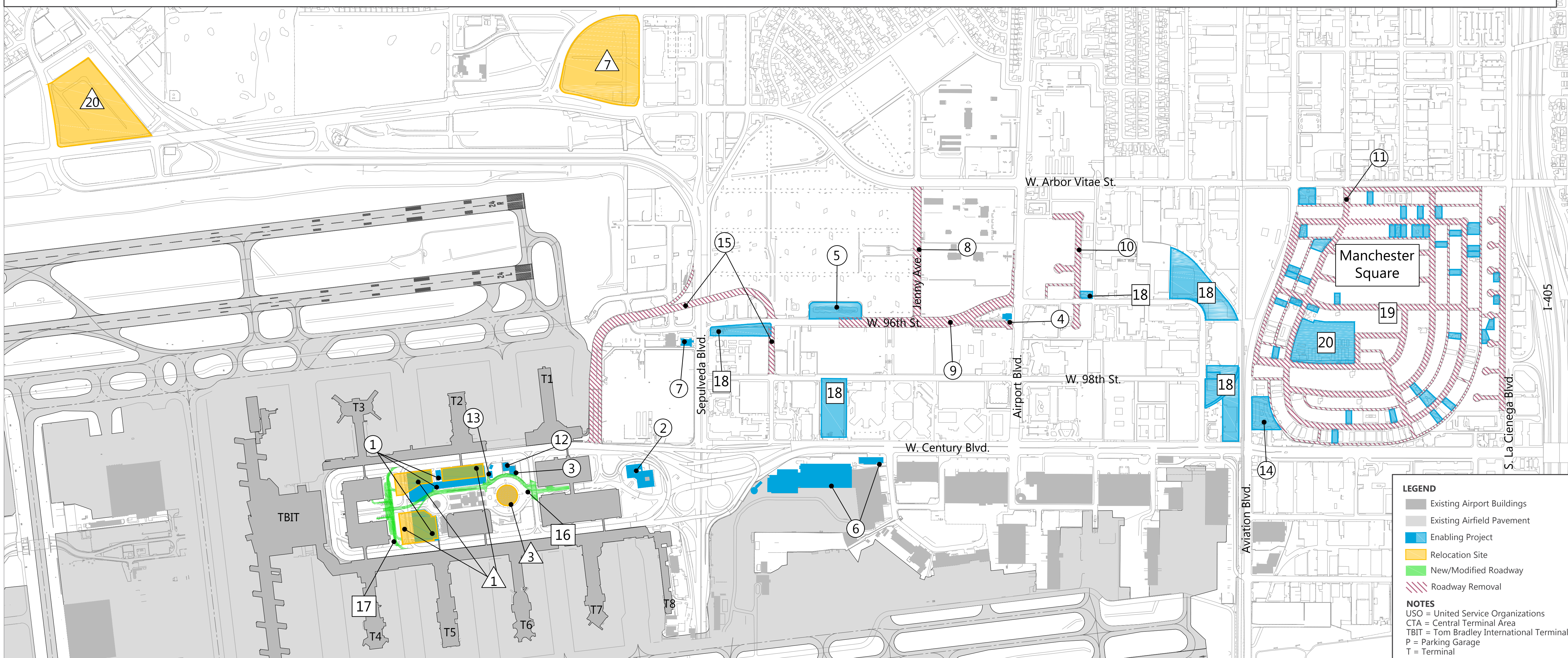
1. Parking garages P2A, P2B, and P5
2. Clifton Moore Administration Building (Admin East)
3. Bob Hope Hollywood USO
4. Restaurant building
5. LAX City Bus Center
6. Hangar Complex
7. Reliant Medical Center
8. Jenny Ave.
9. 96th Street between Vicksburg Ave. and Airport Blvd.
10. Belford Area secondary roadways
11. Manchester Square secondary roadways
12. Drug Enforcement Adminstration Building
13. Operations Trailers
14. Travelodge
15. SkyWay / 96th Street Bridge and Vicksburg Avenue

Facility Relocation Sites

1. Replacement garages in CTA
3. Bob Hope Hollywood USO (multiple potential locations)
7. Reliant Medical Center (potential)
20. Stella Middle Charter Academy and Bright Star Secondary Charter Academy

Other Enabling Projects

16. Improvements to portions of Center Way within the CTA
17. West Way Relocation
18. Land acquisition
19. Completion of the Manchester Square acquisition program
20. Stella Middle Charter Academy and Bright Star Secondary Charter Academy



NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 1,000 ft.

FIGURE 2-44

Enabling Projects

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2.5.1.2 Parking Garage P2B

Parking Garage P2B is located within the CTA, directly to the west of Parking Garage P2A. The current parking structure is 5 levels (approximately 60 feet in height) with a footprint of approximately 64,500 sq. ft., and provides approximately 650 parking spaces for the public. This parking garage is located within the footprint of the proposed APM guideway, and would therefore need to be demolished to enable construction of the proposed Project. To maintain availability of parking within the CTA, Parking Garage P2B would be reconstructed in generally the same location with 6 levels (approximately 70 feet in height). The reconstructed garage would have a footprint of approximately 59,000 sq. ft. and would provide approximately 800 spaces, adding approximately 150 net new parking spaces.

2.5.1.3 Parking Garage P5

Parking Garage P5 is located within the CTA, directly north of Terminal 5. The current parking structure is 5 levels (approximately 60 feet in height) with a footprint of approximately 69,200 sq. ft., and provides approximately 690 parking spaces for the public. This parking garage is located within the footprint of the proposed APM guideway, and would therefore need to be demolished to enable construction of the proposed Project. To maintain availability of parking within the CTA, Parking Garage P5 would be reconstructed in generally the same location. The reconstructed garage would be 6 levels (approximately 70 feet in height) with a footprint of approximately 102,000 sq. ft. and would provide approximately 1,650 spaces, adding approximately 960 net new parking spaces.

2.5.2 DEMOLITION OF CLIFTON MOORE ADMINISTRATION BUILDING

The Clifton Moore Administration Building (Administration East Building), located at 1 World Way, currently supports LAWA administrative offices (see item 2 on Figure 2-44). This two-story facility has a footprint of approximately 34,200 sq. ft. and is located within the footprint of the proposed APM guideway. Therefore, this facility would need to be demolished to enable construction of the proposed Project. The 1961 ATCT, located in the midst of the Clifton Moore Administration Building, is a separate structure and would not be demolished. LAWA administrative offices would be relocated to existing LAWA-owned buildings, including Skyview Center located at 6033 and 6053 W. Century Boulevard.

2.5.3 DEMOLITION/RELOCATION OF USO FACILITY

The Bob Hope Hollywood United Service Organizations (USO) at LAX is a 4,000 sq. ft. center offering 24/7 services to military personnel and their families, as well as traveling veterans (see item 3 on Figure 2-44). The facility is located on the arrivals level of the CTA between Parking Garages P1 and P2A and south of Terminal 2. The USO building footprint is located within the footprint of a proposed pedestrian walkway and would need to be demolished to enable construction of the proposed Project. The functions of the USO would be relocated to the ground floor of the Theme Building.

2.5.4 DEMOLITION OF RESTAURANT BUILDING

An existing restaurant building (Burger King) located at 9601 Airport Boulevard is 5,100 sq. ft. in size (see item 4 on Figure 2-44). The facility currently supports a fast food restaurant (Burger King) and would need to be demolished to enable construction of the APM guideway and/or expansion of Airport Boulevard.

2.5.5 DEMOLITION OF LAX CITY BUS CENTER

The LAX City Bus Center is an 84,300 sq. ft. facility located on the north side of W. 96th Street between S. Sepulveda Boulevard and Jenny Avenue (see item 5 on Figure 2-44). The facility is a regional bus hub accommodating over 20 Metro and municipal bus routes. This bus center would need to be demolished to accommodate the construction of the ITF West. While some public transit buses would continue to board/de-board passengers in the vicinity of the ITF West, the primary functions of this facility would be relocated adjacent to Metro's Aviation/Century Boulevard Station on the Metro Crenshaw/LAX Line, currently under construction, adjacent to the proposed Metro AMC 96th Street Transit Station. Temporary relocation sites for the LAX City Bus Center could include other portions of Lot C, Lot E, or to the area north of Century Boulevard and east of Aviation Boulevard that has been identified for construction staging and laydown.

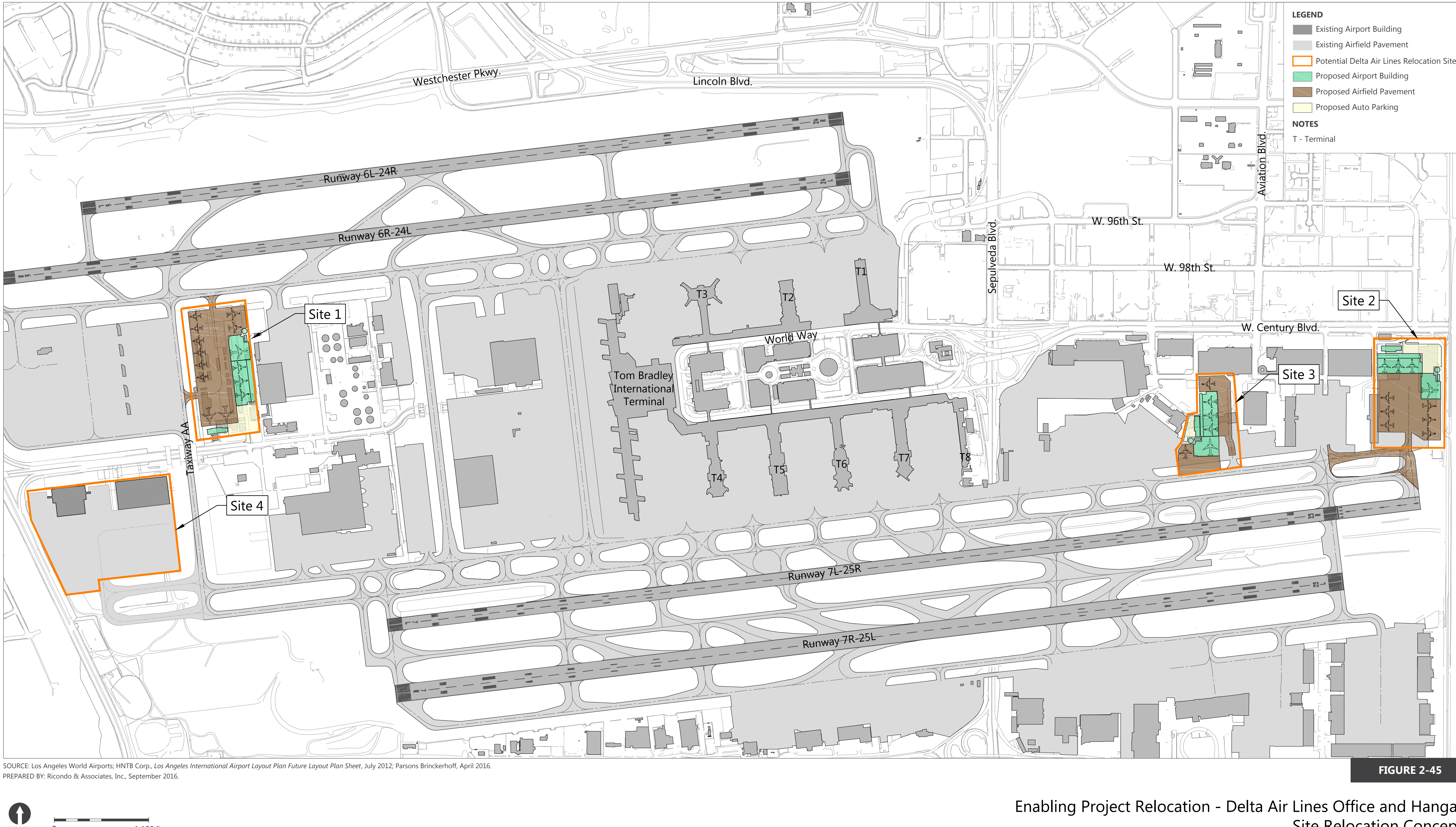
2.5.6 DEMOLITION OF DELTA HANGAR COMPLEX

The Delta Hangar Complex serves as a facility for aircraft maintenance. Located at 6150 W. Century Boulevard, the 182,500 sq. ft. building complex is located within the footprint of the proposed APM guideway alignment and would need to be demolished to enable construction of the proposed Project (see item 6 on Figure 2-44). The building complex includes two hangars, fire suppression control and water storage, and office space. Replacement facilities would be constructed in one of four potential areas, as shown on **Figure 2-45**. A decision on which location the Delta Hangar Complex would be relocated to is dependent upon negotiations with Delta Air Lines to determine a facility and location that meets their business needs. Potential locations are described below, and are analyzed in this Draft EIR (except for Option 4 which has already been environmentally assessed and approved).

2.5.6.1 Potential Relocation Site 1

Potential Relocation Site 1 relocates the Delta Air Lines Maintenance Hangars and Offices southeast of the intersection of Taxiways E and AA. The apron area, with sufficient room for parking aircraft of varying size, would be located in the northeast quadrant proposed site. Additionally, the location of the potential relocation site 1 at the intersection of two taxiways allows the opportunity to provide multiple connections to the taxiway network and offer flow-through traffic. One hangar, the fire suppression control, and water storage would be located along the eastern edge of the proposed apron, with one hangar and associated office space being the southernmost facility in order to provide easy access to the auto parking, which would be positioned adjacent to World Way West. The office building is proposed to be located just west of auto parking.

The site is currently occupied by LAWA Maintenance Services, which would be relocated to the north side of the Airport, south of Westchester Parkway in the area known as the Northside area. **Figure 2-46** depicts the general area where the existing tenants would be relocated.



SOURCE: Los Angeles World Airports; HNTB Corp., *Los Angeles International Airport Layout Plan Future Layout Plan Sheet*, July 2012; Parsons Brinckerhoff, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-45

Enabling Project Relocation - Delta Air Lines Office and Hangars Site Relocation Concepts

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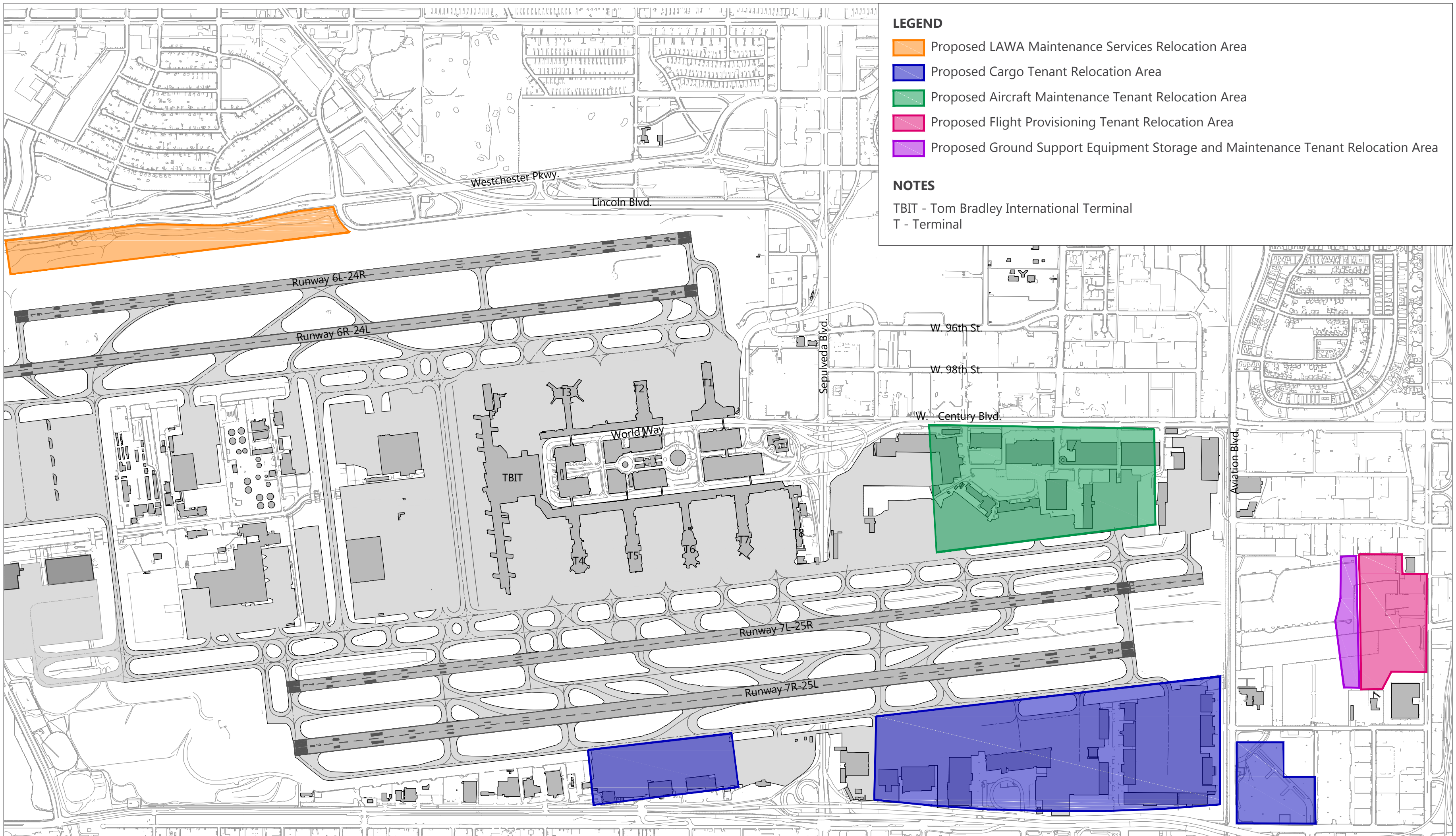

LEGEND

- Proposed LAWA Maintenance Services Relocation Area
- Proposed Cargo Tenant Relocation Area
- Proposed Aircraft Maintenance Tenant Relocation Area
- Proposed Flight Provisioning Tenant Relocation Area
- Proposed Ground Support Equipment Storage and Maintenance Tenant Relocation Area

NOTES

TBIT - Tom Bradley International Terminal
T - Terminal

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

EXHIBIT 2-46

NORTH 0 2,000 ft.

Enabling Project Relocation - Delta Air Lines Office and Hangars Proposed Existing Tenant Relocation Areas

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2.5.6.2 Potential Relocation Site 2

Potential Relocation Site 2 relocates the Delta Air Lines Maintenance Hangars and Offices to the easternmost limits of the south airfield, just north of Runway 7L-25R and Taxiway B. Taxiway C would be extended east and connected to an apron to provide aircraft parking and access to hangars. The hangars, parking, fire suppression control, water storage, and office space would be located at the northern end of the site adjacent to the existing roadway network.

The site currently includes three separate facilities that would be required to be relocated. The facility number, as well as current tenants, are listed below:

- Building 410
  - US Airways
  - Aircraft Service International Group
  - Evergreen International Airlines
- Buildings 411 and 412
  - Southwest Airlines
  - Alaska Airlines
  - Los Angeles County
  - World Wide Flight Services
  - Global Maintenance Technologies

2.5.6.3 Potential Relocation Site 3

Potential Relocation Site 3 relocates the Delta Air Lines Maintenance Hangars and Offices east along Taxiway C to a site currently occupied by a United Airlines maintenance hangar. The site is bordered by Air Freight Building #11 on the east, the United Airlines Cargo Building to the north, and another United Airlines Maintenance Hangar to the west. An apron proposed for the eastern half of the site would be connected to Taxiway C and would provide access to one hangar. The second hangar would be accessed via an apron directly off of Taxiway C. Due to space constraints, there would be limited area to park aircraft on the apron. Auto parking, the office building, fire suppression control, and water storage would be located at the eastern edge of the site.

2.5.6.4 Potential Relocation Site 4

Potential Relocation Site 4 is in the West Aircraft Maintenance Area, adjacent to the Qantas Hangar. This site has been planned and environmentally assessed for an additional aircraft maintenance hangar.[32]

Figure 2-46 depicts the general area where the existing United Airlines Maintenance Hangar would be relocated.

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[32] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) West Aircraft Maintenance Area Project*, (SCH 2012091037), February 2014.

2.5.7 DEMOLITION OF RELIANT MEDICAL CENTER

The Reliant Medical Center is a 30,600 sq. ft. facility located at 9601 S. Sepulveda Boulevard (see item 7 on Figure 2-44). The facility provides urgent medical care to the public and would need to be demolished to support S. Sepulveda Boulevard roadway improvements. The functions of the medical center may be relocated to another location either on-airport, potentially north of Lincoln Boulevard, as shown on Figure 2-44, or to an off-Airport location.

2.5.8 CLOSURE AND DEMOLITION OF JENNY AVENUE

The existing 1,300 feet of Jenny Avenue between Westchester Parkway and W. 96th Street would be closed in order to construct the ITF West (see item 8 on Figure 2-44). Existing pavement would be demolished; approximately 100,000 sq. ft. of pavement would be removed.

2.5.9 W. 96TH STREET CLOSURE

The existing 1,700 feet of W. 96th Street from just east of Vicksburg Avenue to Airport Boulevard would be closed and pavement would be demolished, including 96th Place (see item 9 on Figure 2-44). A footprint of approximately 215,000 sq. ft. of pavement would be removed.

2.5.10 CLOSURE AND DEMOLITION OF BELFORD AREA SECONDARY ROADWAYS

To accommodate construction of the APM MSF, secondary roadways within the Belford residential area, including Belford Avenue, would need to be demolished (see item 10 on Figure 2-44). A footprint of approximately 104,000 sq. ft. of pavement would be removed.

2.5.11 CLOSURE AND DEMOLITION OF MANCHESTER SQUARE SECONDARY ROADWAYS

To accommodate construction of the ITF East and CONRAC, secondary roadways within the Manchester Square area would need to be demolished. A footprint of approximately 1.3 million sq. ft. of pavement would be removed.

2.5.12 DRUG ENFORCEMENT ADMINISTRATION BUILDING

The Drug Enforcement Administration (DEA) Building is a 5,000 sq. ft. modular facility located adjacent to the Theme Building (see item 12 on Figure 2-44). The facility is comprised of office space for DEA operations and would need to be demolished to support construction of the APM guideway. The functions of the DEA Building would be relocated to a lot located south of the Theme Building.

2.5.13 OPERATIONS TRAILERS

Two trailers, totaling 2,800 sq. ft., are located adjacent to the Theme Building providing LAWA with operational support (see item 13 on Figure 2-44). The trailers would need to be relocated to support construction of the APM guideway. The functions of the operations trailers would be relocated to a lot located south of the Theme Building.

2.5.14 TRAVELODGE HOTEL

The Travelodge Hotel, located at 5547 W. Century Boulevard, is situated on property owned by LAWA (see item 14 Figure 2-44). The current lease on this facility expires in April 2018. If the lease is not renewed, the Travelodge Hotel would be demolished. Proposed improvements to Aviation Boulevard, currently anticipated to occur in the latter part of Phase 1, would impact access and parking at the Travelodge Hotel.

2.5.15 CLOSURE AND DEMOLITION OF SKY WAY/W. 96TH STREET BRIDGE

The Sky Way/W. 96th Street bridge over Sepulveda Boulevard would be demolished once the ramps from southbound Sepulveda Boulevard into the CTA are constructed (see Section 2.4.4). Approximately 282,00 sq. ft. of structure and pavement would be removed.

2.5.16 IMPROVEMENTS TO CENTER WAY

Center Way is a ground-level, one-way, three-lane roadway within the CTA. Center Way runs west to east, parallel to World Way North and World Way South (see item 16 on Figure 2-44). Center Way would be shifted in some sections to allow for the construction of the APM guideway and stations, but would remain a one-way, three-lane road.

2.5.17 RELOCATION OF WEST WAY

West Way would be relocated approximately 200 feet to the west, adjacent to the pedestrian walkway connecting Parking Garages P3 and P4 and Terminals T3 and T4 (see item 17 on Figure 2-44). West Way is proposed as a two-level, two-lane roadway with an added drop-off lane on the west side and an added lane for ingress into the parking garages. The proposed roadway would be configured to accommodate southbound travel only at both levels. Access to new Parking Garages P2B and P5 would be accommodated at both levels from West Way.

2.5.18 PROPERTY ACQUISITION

In order to facilitate construction of the proposed Project, acquisition of several properties located along the proposed APM and roadway alignments would be required (see item 18 on Figure 2-44). Specifically, acquisition of parcels (in whole or in part) would be required where the APM or roadway improvements are proposed including, but not limited to: 1) 6141 W. Century Boulevard owned by Metro and leased by an off-airport parking operator; 2) 9600 S. Sepulveda Boulevard owned by the Los Angeles Community College District and leased by an off-airport parking operator; 3) 5651 W. 96th Street owned by China Airlines Cargo; 4) 9606/9610 Bellanca Avenue occupied by Secom International; and 5) 9600 S. Sepulveda Boulevard owned by WallyPark. The Belford area and Manchester Square acquisition program is discussed in the next section. Additional information for all parcels to be acquired is included in **Table 2-11**. The locations of these parcels are shown on **Figure 2-47**.

Several billboards are located on properties to be acquired or altered by the proposed Project components. Approximately 23 billboards would be acquired and/or displaced as part of the proposed Project. Additional information regarding billboards is included in Table 2-11; billboard locations are shown on Figure 2-47.

Table 2-11 (1 of 3): Properties to be Acquired

MAP KEY NO. # [/2]	PROPERTY ADDRESS	PRIMARY BUSINESS	LOT AREA (ACRES)	ZONING	APN
1	9600 S. Sepulveda Blvd., Los Angeles, CA 90045	Owner Occupied/Billboard Lease Agreement	1.46	C2-2	4124025049
2	6141 W. Century Blvd., Los Angeles, CA 90045	Metro Billboard Lease Agreement	3.23	C2-2	4124030900
3	9520 Belford Ave., Los Angeles, CA 90045 5815 W. 96th St., Los Angeles, CA 90045	Residential	0.18	R3-1	4125023007
4	5651 W. 96th St., Los Angeles, CA 90045 5661 W. 96th St., Los Angeles, CA 90045	China Airlines	3.16	M2-1	4125021025
5	9606 Bellanca Ave., Los Angeles, CA 90045 9600 S. Bellanca Ave., Los Angeles, CA 90045 9610 S. Bellanca Ave., Los Angeles, CA 90045	Secom	2	M2-1	4125021026
6	9784 S Bellanca Ave., Los Angeles, CA 90045	Light Manufacturing [1/]	0.69	M2-1	4125026015
7	9790 Bellanca Ave., Los Angeles, CA 90045	Light Manufacturing [1/]	0.19	M2-1	4125026014
8	9830 Bellanca Ave., Los Angeles, CA 90045	VIP Tours of California	1.09	M2-1	4125026009
9	No Address	N/A	0.23	M2-1	4125026802
10	5601 W. Century Blvd., Los Angeles, CA 90045	Construction Staging	0.83	M2-1	4125026904
11	5507 W. 98th St., Los Angeles CA 90045 5509 W. 98th St., Los Angeles CA 90045	Residential	0.15	LAX	4128011002
12	9608 Aviation Blvd., Los Angeles CA 90045 9610 S. Aviation Blvd., Los Angeles, CA 90045 9612 S. Aviation Blvd., Los Angeles, CA 90045	Residential	0.15	LAX	4128011021
13	9508 S. Aviation Blvd., Los Angeles, CA 90045 9510 S. Aviation Blvd., Los Angeles, CA 90045	Residential	0.15	LAX	4128010019
14	9500 S. Aviation Blvd., Los Angeles, CA 90045 9502 S. Aviation Blvd., Los Angeles, CA 90045	Residential	0.16	LAX	4128010020
15	9302 Aviation Blvd., Los Angeles, CA 90045 9304 Aviation Blvd., Los Angeles, CA 90045 5532 W. 93rd St., Los Angeles, CA 90045	Residential	0.19	LAX	4128010001
16	9323 S. Isis Ave., Los Angeles, CA 90045	Residential	0.38	LAX	4128010026
17	9507 S. Isis Ave., Los Angeles, CA 90045	Residential	0.15	LAX	4128010014
18	5502 W. 96th St., Los Angeles, CA 90045 9601 S. Isis Ave., Los Angeles, CA 90045	Residential	0.15	LAX	4128011014
19	5431 W. 96th St., Los Angeles, CA 90045	Institution	5.51	LAX	4128012900
20	5452 W. 96th St., Los Angeles, CA 90045 9600 S. Isis Ave., Los Angeles, CA 90045 9602 S. Isis Ave., Los Angeles, CA 90045	Residential	0.14	LAX	4128012018
21	5429 W. 96th St., Los Angeles, CA 90045	Residential	0.13	LAX	4128007005
22	5418 W. Arbor Vitae St., Los Angeles, CA 90045 5420 W. Arbor Vitae St., Los Angeles, CA 90045	Residential	0.16	LAX	4128003025
23	5325 W. 93th St., Los Angeles, CA 90045 5327 W. 93th St., Los Angeles, CA 90045	Residential	0.15	LAX	4128003010
24	5307 W. 93th St., Los Angeles, CA 90045 5309 W. 93th St., Los Angeles, CA 90045	Residential	0.15	LAX	4128003013
25	9218 Hindry Pl., Los Angeles, CA 90045 9220 Hindry Pl., Los Angeles, CA 90045 5279 W. 93rd St., Los Angeles, CA 90045	Residential	0.18	LAX	4128004011

Table 2-11 (2 of 3): Properties to be Acquired

MAP KEY NO. # /2	PROPERTY ADDRESS	PRIMARY BUSINESS	LOT AREA (ACRES)	ZONING	APN
26	5336 W. 93th St., Los Angeles, CA 90045 5338 W. 93th St., Los Angeles, CA 90045	Residential	0.15	LAX	4128009026
27	5330 W. 93th St., Los Angeles, CA 90045 5332 W. 93th St., Los Angeles, CA 90045	Residential	0.15	LAX	4128009036
28	5324 W. 93th St., Los Angeles, CA 90045 5326 W. 93th St., Los Angeles, CA 90045	Residential	0.15	LAX	4128009023
29	5306 W. 93th St., Los Angeles, CA 90045 5308 W. 93th St., Los Angeles, CA 90045	Residential	0.31	LAX	4128009037
30	5302 W. 93th St., Los Angeles, CA 90045 9301 S. Hindry Pl., Los Angeles, CA 90045 9303 S. Hindry Pl., Los Angeles, CA 90045	Residential	0.17	LAX	4128009018
31	9318 Hindry Pl., Los Angeles, CA 90045	Residential	0.14	LAX	4128006018
32	9311 Glasgow Pl., Los Angeles, CA 90045 9313 Glasgow Pl., Los Angeles, CA 90045	Residential	0.15	LAX	4128006013
33	9312 Glasgow Pl., Los Angeles, CA 90045 9314 Glasgow Pl., Los Angeles, CA 90045	Residential	0.32	LAX	4128004039
34	9330 S. Glasgow Pl., Los Angeles, CA 90045 9332 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.15	LAX	4128005001
35	9336 S. Glasgow Pl., Los Angeles, CA 90045 9338 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.15	LAX	4128005002
36	9415 S. Glasgow Pl., Los Angeles, CA 90045 9417 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.15	LAX	4128006006
37	5200 W. 95th St., Los Angeles, CA 90045	Residential	0.12	LAX	4128005022
38	5200 W. 95th St., Los Angeles, CA 90045 9521 S. La Cienega Blvd., Los Angeles, CA 90045	Residential	0.11	LAX	4128005016
39	9627 S. Glasgow Pl., Los Angeles, CA 90045 9629 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.15	LAX	4128015005
40	5206 Pardee St., Los Angeles, CA 90045	Residential	0.14	LAX	4128016028
41	5211 W. 97th St., Los Angeles, CA 90045	Residential	0.18	LAX	4128016024
42	9742 S. Hindry Pl., Los Angeles, CA 90045	Residential	0.16	LAX	4128018019
43	9819 S. Glasgow Pl., Los Angeles, CA 90045 9821 S. Glasgow Pl., Los Angeles, CA 90045 9823 S. Glasgow Pl., Los Angeles, CA 90045 9825 S. Glasgow Pl., Los Angeles, CA 90045 9827 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.33	LAX	4128018022
44	5357 W. 99th St., Los Angeles, CA 90045 5359 W. 99th St., Los Angeles, CA 90045	Residential	0.16	LAX	4128020021
45	5412 W. 99th St., Los Angeles, CA 90045 5414 W. 99th St., Los Angeles, CA 90045	Residential	0.17	LAX	4128023014
46	5311 W. 99th Pl., Los Angeles, CA 90045 5313 W. 99th Pl., Los Angeles, CA 90045	Residential	0.16	LAX	4128019016
47	9200 S. Aviation Blvd., Los Angeles, CA 90045 9210 S. Aviation Blvd., Los Angeles, CA 90045 5548 W. Arbor Vitae St., Los Angeles, CA 90045 5536 W. Arbor Vitae St., Los Angeles, CA 90045 5530 W. Arbor Vitae St., Los Angeles, CA 90045	Service Station	0.58	C2-1	4128002015
48	9828 S. Glasgow Pl., Los Angeles, CA 90045 9830 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.17	LAX	4128017022

[Draft]

Table 2-11 (3 of 3): Properties to be Acquired

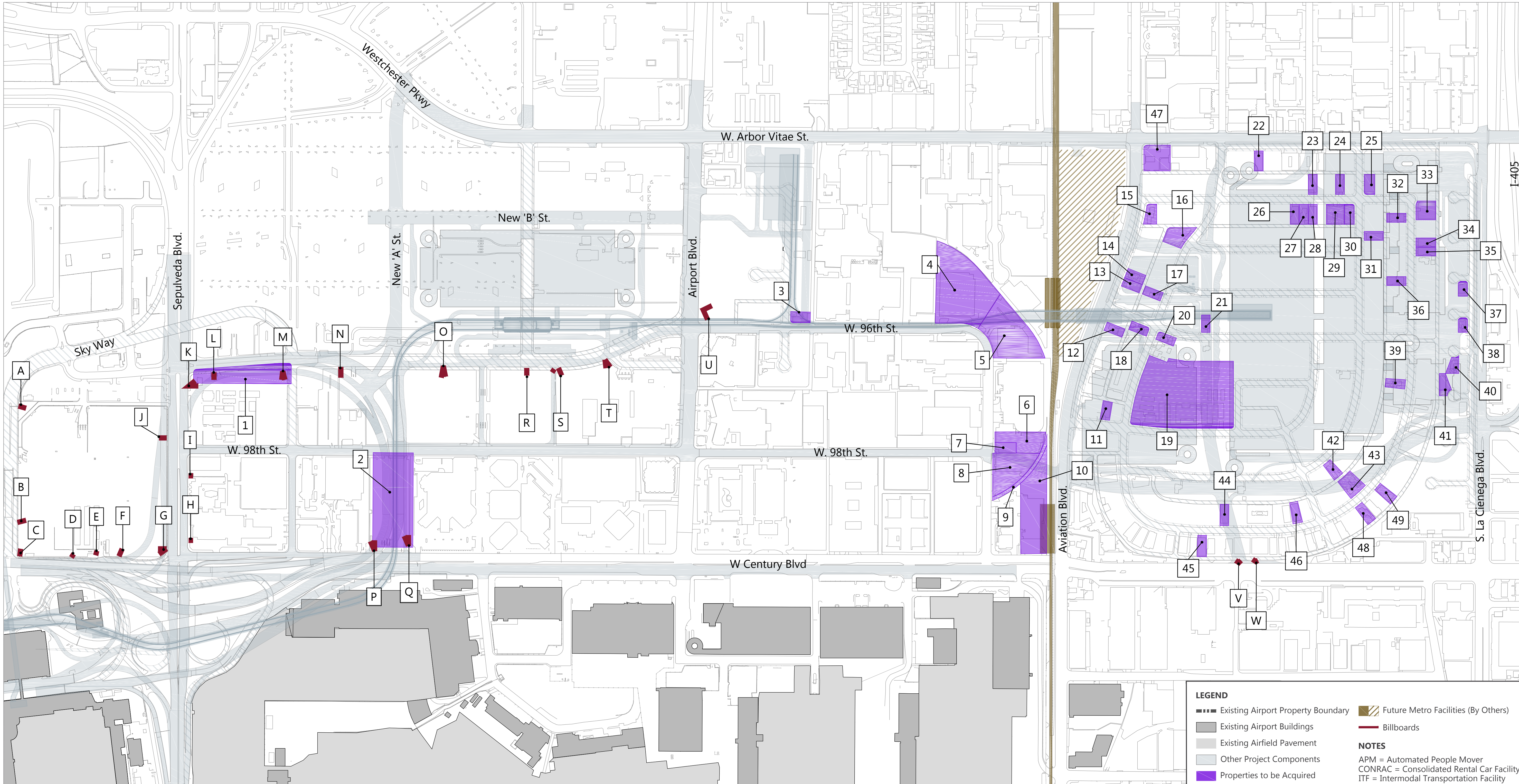
MAP KEY NO. # /2	PROPERTY ADDRESS	PRIMARY BUSINESS	LOT AREA (ACRES)	ZONING	APN
49	9814 S. Glasgow Pl., Los Angeles, CA 90045 9816 S. Glasgow Pl., Los Angeles, CA 90045	Residential	0.17	LAX	4128017019
A	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
B	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
C	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		
D	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		
E	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
F	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
G	9851 S. Sepulveda Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
H	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		
I	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		
J	6351 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4117034901
K	6250 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124025049
L	6250 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124025049
M	9611 S. Vicksburg Ave., Los Angeles, CA 90045	N/A	N/A		4124025049
N	W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124027017
O	5978 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124030900
P	6145 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4124030900
Q	6145 W. Century Blvd., Los Angeles, CA 90045	N/A	N/A		4124030900
R	6046 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124028900
S	6150 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124027906
T	5978 W. 96th St., Los Angeles, CA 90045	N/A	N/A		4124028900
U	9440 S. Airport Blvd., Los Angeles, CA 90045	N/A	N/A	LAX	4125023903

NOTES:

1/ Ownership information not available, this is the use.

2/ Billboards are denoted with a letter on Figure 2-47 and in the Map Key No. # column.

SOURCE: City GIS Data, 2015.
PREPARED BY: Ricondo & Associates, Inc., March 2016.



NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016; Los Angeles World Airports, June 2016; Parsons Brinckerhoff, June 2016; Ricondo & Associates, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 600 ft.

FIGURE 2-47

Properties to be Acquired

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2.5.19 COMPLETION OF BELFORD AND MANCHESTER SQUARE PROPERTY ACQUISITION

LAWA has an existing relocation program underway to mitigate aircraft noise impacts on area residences, as part of LAWA's Aircraft Noise Mitigation Program (ANMP). A total of over 2,500 houses and apartments in Manchester Square, the future location of the ITF East and the CONRAC facility, and the Belford residential area, the future location of the APM MSF, have been or are planned to be acquired and the residents relocated under the existing ANMP. Over 92 percent of the homes in these areas have successfully been acquired through voluntary acquisition. The Belford and Manchester Square residential areas are located within areas exposed to significant levels of aircraft noise, as defined by the FAA. In 1997, residents of these areas approached LAWA and requested acquisition of their homes and families relocated rather than have their homes soundproofed. LAWA agreed and after conducting an environmental review[33], began acquiring homes in the Belford and Manchester Square residential areas in the early 2000s. In addition, the LAX Master Plan (and its associated EIR/EIS) contemplated the continued relocation of uses that are incompatible with Airport activities, including through eminent domain as needed.[34]

As of August 2016, the Belford area contains one multi-family residential structure at the corner of Belford Avenue and W. 96th Street; the Manchester Square area contains 6 single-family residential structures and 31 multi-family residential units. Using 2010 U.S. Census records[35] and the City of Los Angeles Geographic Information System data[36], it has been estimated that approximately 22 residents remain in the Belford area and approximately 508 residents remain in Manchester Square.

If the proposed Project were not approved and implemented, LAWA would continue its efforts to relocate these incompatible uses. Should the land acquisition under the existing ANMP Relocation Plan for Manchester Square not be completed by the time the proposed Project is approved and advanced into implementation, the City of Los Angeles and LAWA would explore the most appropriate and practical measures (e.g., voluntary acquisition, leasing, and/or eminent domain) to ensure that the designated areas are vacated consistent with the proposed Project's construction sequencing plan given that these properties would be required for construction staging and Airport support purposes.

2.5.20 STELLA MIDDLE CHARTER ACADEMY AND BRIGHT STAR SECONDARY CHARTER ACADEMY

The Stella Middle Charter Academy and Bright Star Secondary Charter Academy facilities located at 5431 W. 98th Street are also located within Manchester Square (see item 20 on Figure 2-44). This property is owned by the Los Angeles Unified School District (LAUSD) and is in the process of being acquired; it is LAWA's goal that the two charter schools would be closed and relocated prior to Project construction. However, LAWA

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33 City of Los Angeles, Los Angeles World Airports, Final Initial Study/Mitigated Negative Declaration, *Manchester Square and Airport/Belford Area Voluntary Acquisition Project,* June 2000.

34 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.4.2, Relocation of Residences or Businesses,* April 2004.

35 U.S. Department of Commerce, U.S. Census Bureau, 2010 Decennial Census Data, Available: http://factfinder.census.gov/, accessed February 24, 2016.

36 City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

may need to construct some of the APM guideway columns west of the schools and east of Aviation Boulevard prior to the school relocations. Currently, Bright Star is working actively to find new school facilities for Bright Star Secondary Charter Academy and Stella Middle Charter Academy in closer proximity to other existing affiliated schools and the majority of students' residential neighborhoods to reduce or avoid long busing operations. In the event that permanent facilities are not available at the time the properties are needed for construction, temporary facilities would be constructed on the LAX Northside area. Modular facilities may be potentially constructed or rented to allow for temporary operations of the schools for a period of up to three years, or until the new school facilities are secured and available for use.

2.5.21 UTILITY RELOCATION

The proposed Project would include demolition, reconstruction, and construction of new facilities and roadways or roadway modifications in the LAX area. As many utility lines are located within the roadway rights-of-way, any modifications to roadways around LAX may result in the necessary relocation of utility lines. Where existing utility service is located in an affected roadway, re-routing of the utility would need to occur before re-development of the land. If the utility is not re-routed, easements may be required to provide for future maintenance, depending on the circumstances of the changed conditions. In rare instances, LAWA may need to exercise eminent domain to relocate utilities. Some utility lines may be protected in place.

Some of the utilities are private facilities owned by LAWA while some are provided by the respective public utility providers. LAWA typically provides the physical infrastructure for utilities (conduits, pipe, duct banks, etc.) whether they are private or public. The operating authority typically provides the supply infrastructure (such as high voltage or low voltage cable), or the utility commodity (such as water and gas, etc.). LAWA provides drainage infrastructure from LAWA properties in the CTA to the appropriate public main infrastructure such as major storm drains or wastewater sewers.

Table 2-12 identifies the major utilities that would need to be relocated as part of the proposed Project, including along Aviation Boulevard, due to the depression of the Aviation Boulevard/W. 98th Street intersection. As noted in Section 2.4.4, this intersection would need to be depressed approximately 5 feet below the current elevation to allow for the connection of W. 98th Street underneath the Metro Crenshaw/LAX Line.

Table 2-12: Projected Utility Relocations

GENERAL LOCATION	CONFLICT	UTILITY	UTILITY TO BE RELOCATED
Central Terminal Area	APM Station Columns	Water	• 2″ 200′ E-W line
		Stormwater	• 18″ 180′ E-W line • 15″ 60′ N-S line
		Electrical	• 260′ N-S line
	Parking Garage P2A	Water	• 12″ 270′ NE-SW line • 12″ 80′ N-S line • 2″ 150′ N-S line • 2″ 400′ E-W line
		Fiber Optic	• 40′ N-S line
		Electrical	• 80′ E-W line
	Parking Garage P2B	Electrical	• 50′ E-W line
		Water	• 2″ 240′ N-S line • 2″ 210′ N-S line • 12″ 140′ N-S line
		Stormwater	• 21″ 230′ N-S line • 12″ 140′ E-W line
	Parking Garage P5	Electrical	• 50′ E-W line
		Stormwater	• 21″ 220′ E-W line • 21″ 120′ N-S line
		Water	• 2″ 300′ N-S line • 2″ 300′ N-S line • 8″ 300′ N-S line
	APM Columns	Electrical	• 50′ E-W line • 50′ E-W line • 40′ E-W line • 40′ E-W line • 40′ E-W line
		Water	• 18″ 60′ E-W line • 24″ 60′ E-W line
W. Century Boulevard	APM Columns	Stormwater	• 36″ 50′E-W line • 36″ 50′ N-S line
		Electrical	• 40′ E-W line
W. 96th Street	APM Columns	Electrical	• 60′E-W line
		Water	• 12″ 60′E-W line
ITF West	APM Columns	Gas	• 40′E-W line
		Stormwater	• 21″ 50′E-W line
	ITF West Parking Garage	Water	• 30″ 600′N-S line
		Sanitary Sewer	• 10″ 1,000′N-Sline
		Stormwater	• 30″ 1,000′N-Sline
APM MSF	APM MSF	Gas	• 400′ N-S line • 250′ N-S line
		Sanitary Sewer	• 12″ 200′E-W line • 12″ 550′ E-W-S line
		Electrical	• 2,800′ N-S-E-W transmission line
		Water	• 2″ 550′E-W-S line

SOURCE: STV Incorporated, January 2016.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

Additional utility relocations resulting from implementation of the proposed Project would include:

- **Electrical**. As part of the proposed Project, existing power lines would need to be relocated to allow for roadway improvements, construction of the APM guideway, and construction of the ITF East and CONRAC; this would require the installation of new poles for overhead wires and/or moving a portion of existing lines underground. Existing distribution lines to properties on the APM MSF site and ITF East and CONRAC sites would need to be capped and abandoned/removed during construction. Any electrical line relocation would be coordinated with LADWP.
- **Water**. To the extent possible, the proposed Project would avoid conflicts with existing water lines, including the adjacent LADWP water mains located in the utility corridors along W. Century Boulevard, S. Sepulveda Boulevard, and Westchester Parkway/W. Arbor Vitae Street. However, as part of the APM guideway construction and some of the proposed roadway improvements, it may be necessary to relocate some smaller lines. Existing distribution lines to properties on the APM MSF site and ITF East and CONRAC sites would need to be capped and abandoned/removed during construction. If required, water line relocation(s) would be coordinated with LADWP.
- **Sewer**. As part of the construction of the APM guideway and proposed roadway improvements, it may be necessary to relocate some sewer lines. Existing collector lines to properties on the APM MSF site and ITF East and CONRAC sites would need to be capped and abandoned/removed during construction. However, sewer trunk lines would not need to be relocated. Any potential relocation(s) would be coordinated with the Bureau of Sanitation Wastewater Technical Engineering Services Division.
- **Natural Gas**. As with other underground utilities, it may be necessary to relocate some lines as part of the APM guideway construction, or proposed roadway improvements. Existing distribution lines to properties on the APM MSF site and ITF East and CONRAC sites would need to be capped and abandoned/removed during construction. Any potential conflicts and relocations would be coordinated with Sempra Energy.
- **Telecommunications**. As part of the construction of the APM guideway and proposed roadway improvements, it may be necessary to relocate some telecommunication lines. Existing distribution lines to properties on the APM MSF site and ITF East and CONRAC sites would need to be capped and abandoned/removed during construction. Any potential relocation(s) would be coordinated with the appropriate telecommunications provider.

2.5.22 EXISTING RENTAL CAR FACILITIES

Rental car agencies have indicated that in the short-term, existing rental car facilities located on private property would remain and continue to be used for vehicle storage, administrative functions, and heavy maintenance. Long-term disposition of privately-owned property would be up to each respective agency. However, as of January 2016, none of the rental car agencies operating on private property had made definitive plans for the long-term disposition of the property.

2.5.23 EASEMENTS AND ACQUISITION FOR ROADWAY IMPROVEMENTS

The proposed roadway improvements, discussed in Section 2.4.4, would require the construction of new driveways, curb cuts, and ramps. These improvements would require easements or property acquisition. LAWA would utilize easement and partial takes to the extent feasible, to minimize any acquisition required. **Table 2-13** identifies the property that would be affected.

[Draft]

Table 2-13 (1 of 2): Property Acquisition and Easements for Roadway Improvements

#	LOCATION	APN #	PROPERTY OWNER	TYPE OF ACCESS (DRIVEWAY/RAMP)	TYPE OF ROW (PROPERTY TAKE/EASEMENT)
1	5965 W 98th St	4124029028	3rd Party	98th St Widening	Property Take
2	5945 W 98th St	4124029030	3rd Party	98th St Widening	Property Take
3	9775 Airport Blvd	4124029031	3rd Party	98th St Widening/Airport Blvd Widening	Property Take
4	5551 W Century Blvd	4128024002	3rd Party	Join Existing Aviation Blvd	Easement
5	5972 W 96th St	4124029012	3rd Party	96th St Rotary	Property Take
6	5966 W 96th St	4124029032	3rd Party	96th St Rotary	Property Take
7	5962 W 96th St	4124029033	3rd Party	96th St Rotary	Property Take
8	5958 W 96th St Los	4124029034	3rd Party	96th St Rotary	Property Take
9	5952 W 96th St	4124029035	3rd Party	96th St Rotary	Property Take
10	5948 W 96th St	4124029036	3rd Party	96th St Rotary	Property Take
11	5942 W 96th St	4124029037	3rd Party	96th St Rotary	Property Take
12	5938 W 96th St	4124029038	3rd Party	96th St Rotary	Property Take
13	5932 W 96th St	4124029039	3rd Party	96th St Rotary	Property Take
14	5928 W 96th St	4124029009	3rd Party	96th St Rotary	Property Take
15	5922 W 96th St	4124029010	3rd Party	96th St Rotary	Property Take
16	5918 W 96th St	4124029023	3rd Party	96th St Rotary	Property Take
17	5912 W 96th St	4124029024	3rd Party	96th St Rotary	Property Take
18	5906 W 96th St	4124029011	3rd Party	96th St Rotary	Property Take
19	5900 W 96th St	4124029026	3rd Party	96th St Rotary	Property Take
20	6101 W Century	4124030036	3rd Party	Curb Ramp/Driveway Relocation	Property Take/Easement
21	9133 S La Cienega Blvd Inglewood	4126011055	3rd Party	Curb Ramp	Property Take/Easement

[Draft]

Table 2-13 (2 of 2): Property Acquisition and Easements for Roadway Improvements

#	LOCATION	APN #	PROPERTY OWNER	TYPE OF ACCESS (DRIVEWAY/RAMP)	TYPE OF ROW (PROPERTY TAKE/EASEMENT)
22	901 W Arbor Vitae St Inglewood	4126014052	3rd Party	Curb Ramp	Property Take/Easement
23	939 W Arbor Vitae St Inglewood	4126014049	3rd Party	Curb Ramp	Property Take/Easement
24	1001 W Arbor Vitae St Inglewood	4126016017	3rd Party	Curb Ram	Property Take/Easement
25	1071 W Arbor Vitae St Inglewood	4126016010	3rd Party	Curb Ramp	Property Take/Easement
26	9150 S Aviation Blvd Inglewood	4126017006	3rd Party	Curb Ramp	Property Take/Easement
27	9131 Aviation Blvd Inglewood	4126020012	3rd Party	Curb Ramp/Driveway Relocation	Property Take/Easement
28	9225 Aviation Blvd	4128001008	Metro	W Arbor Vitae St Road Widening	Property Take/Easement
29	9801 Airport Blvd	4124030041	3rd Party	Curb Ramp	Property Take/Easement
30	5705 W 98th St	4125024022	3rd Party	Curb Ramp	Property Take/Easement
31	5701 W Century Blvd	4125025040	3rd Party	Curb Ramp	Property Take/Easement
32	5307 W Century Blvd	4128024011	3rd Party	Roadway: Century Rt Turn Pocket	Property Take
33	5525 W Imperial Hwy	4129037037	3rd Party	Curb Ramp/Driveway Relocation	Property Take/Easement
34	5760 Arbor Vitae St	4125020014	3rd Party	Driveway Relocation	Easement
35	5771 W 96th St Los Angeles	4125021030	3rd Party	Driveway Relocation	Easement
36	5700 W 96th St Los Angeles	4125024024	3rd Party	Driveway Relocation	Easement
37	9625 Bellanca Ave	4125024025	3rd Party	Join Existing Bellanca Ave	Easement
38	9700 Bellanca Ave	4125021031	3rd Party	Join Existing Bellanca Ave	Easement
39	La Cienega Blvd & I-405 Off Ramp - New 98th St	4128025021	3rd Party	I-405 Ramp Widening	Property Take
40	Sepulveda Blvd, 98th St And Vicksburg	4124026900	3rd Party	Reconfiguration Of The Knot	Property Take
41	6206 W 96th St	4124027032	3rd Party	Reconfiguration Of The Knot	Property Take
42	6200 W 96th St	4124027031	3rd Party	Reconfiguration Of The Knot	Property Take
43	6151 W Century Blvd	4124030029	3rd Party	The Knot Improvements	Easement

SOURCE: MapLAX, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

2.5.24 REMOVAL OF STREET PARKING

The proposed Project would result in the removal of parking along some streets. **Table 2-14** identifies the location and amount of street parking that would be eliminated due to implementation of the proposed Project. A total of approximately 200 parking spaces would be eliminated.

Table 2-14: Impacted Street Parking

LOCATION	DIRECTION	TYPE OF PARKING	FROM	TO	SPACES REMOVED /1
93rd Street	WB	528 Linear Ft Parking	Airport Boulevard	Belford Avenue	21 (all)
95th Street	WB	414 Linear Ft Parking	Cul-de-sac	Belford Avenue	17 (all)
96th Street	WB	478 Linear Ft Parking	Airport Boulevard	Bellanca Avenue	10 (238 Linear Ft)
	WB	141 Linear Ft Double Parking	Airport Boulevard	Bellanca Avenue	24 (all)
98th Street	EB	25 Meters Short-Term Parking/2	Vicksburg Avenue	Airport Boulevard	8
	EB	8 Meters Short-Term Parking/2	Airport Boulevard	Bellanca Avenue	4
	WB	63 Meters Short-Term Parking/2	Vicksburg Avenue	Bellanca Avenue	16
Airport Boulevard	NB	1 Meter Parking	98th Street	96th Street	1
	NB	Loading Zone (2)	98th Street	96th Street	2
	NB	Taxi Loading Zone (4)	98th Street	96th Street	4
	NB	633 Linear Ft Parking	96th Street	93rd Street	26 (all)
Belford Avenue	NB	630 Linear Ft Parking	93rd Street	96th Street	25 (all)
	SB	541 Linear Ft Parking	93rd Street	96th Street	22 (all)
	SB	450 Linear Ft Parking	96th Street	Cul-de-sac	18 (all)
W Arbor Vitae Street	EB	94 Linear Ft Short-term Parking	Airport Boulevard	New D Street	4 (all)
	WB	335 Linear Ft Parking	New D Street	Bellanca Avenue	4 (100 Linear Ft)

NOTES:

1/ Assumes 25 linear feet equals one parking spot

2/ Peak AM and PM restrictions

Source: MapLAX, August 2016.
Prepared by: Ricondo & Associates, Inc., August 2016.

2.6 Construction

2.6.1 PHASING

Construction of the proposed Project would occur in two separate phases. The first phase would be constructed over approximately 6 years, beginning at the end of 2017 and finishing in approximately 2023. While construction of the APM would be completed in 2023, construction of other facilities could extend into 2024. The second phase of construction would begin in approximately 2025 and be completed by approximately 2035. The Project has been divided into two phases because Phase 2 cannot begin until the APM is completed. In order to meet schedule constraints, multiple Project components may be under construction concurrently. Construction of the proposed Project is contingent on Project approvals, which are planned to be obtained in 2017. The general sequence of construction developed for analysis in this EIR represents the best available information.

Due to site constraints, particularly within the CTA, just-in-time deliveries of construction materials would be required during off-peak hours. Additionally, construction of the APM guideway columns and stations that would impact CTA roads would be primarily constructed during the night-time hours in order to minimize impacts to Airport operations. Assumptions for construction shifts are as follows:

- APM guideway and station components that would be located within the CTA would be constructed over an 18 hour/day schedule with two shifts. The "night" shift would occur from approximately 1 a.m. to 9 a.m., the "day" shift would occur from approximately 9 a.m. to 7 p.m., and minimal construction would occur between 7 p.m. and 1 a.m. Approximately 65 percent of the CTA APM construction activity would occur during the 8-hour night shift and 35 percent would occur during the 10-hour day shift.
- Remaining Project construction activity would occur during two 8-hour shifts/work day (16 hours/day): a morning shift from approximately 7 a.m. to 3 p.m., and an evening shift from approximately 3 p.m. to 11 p.m. For construction of the APM guideway outside of the CTA, approximately 60 percent of construction would occur during the morning shift and 40 percent during the evening shift. For construction of all other elements (excluding the APM guideway), approximately 80 percent would occur during the morning shift and 20 percent during the evening shift.

2.6.1.1 Phase 1

The first phase would include enabling projects and the construction of the APM operating system and fixed facilities, the CONRAC, the ITF West, the ITF East, and a portion of roadway improvements (see **Figure 2-48**). As previously discussed, these elements would be constructed over approximately 6 years, beginning towards the end of 2017 and finishing in approximately 2023. The projected construction schedule for Phase 1 components of the proposed Project is shown on **Table 2-15**. Further information for each facility is discussed below.

- The initial stages of construction would focus on enabling projects, including the 5-level western section of the public parking garage at the ITF West, CTA parking garage reconstruction, property acquisition, and utility relocation.

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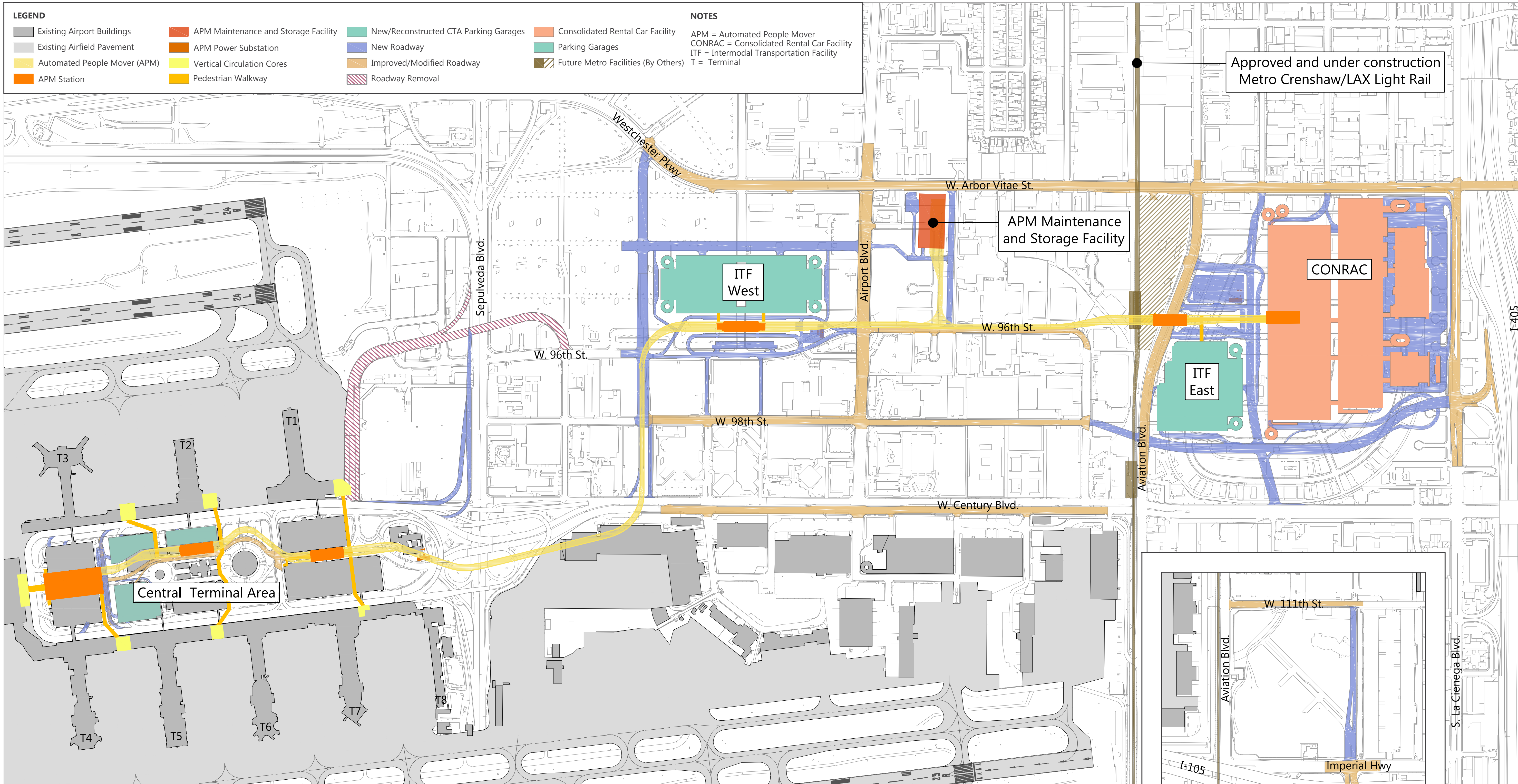

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-48

LAX Landside Access Modernization Program Components
Phase 1 (2024)

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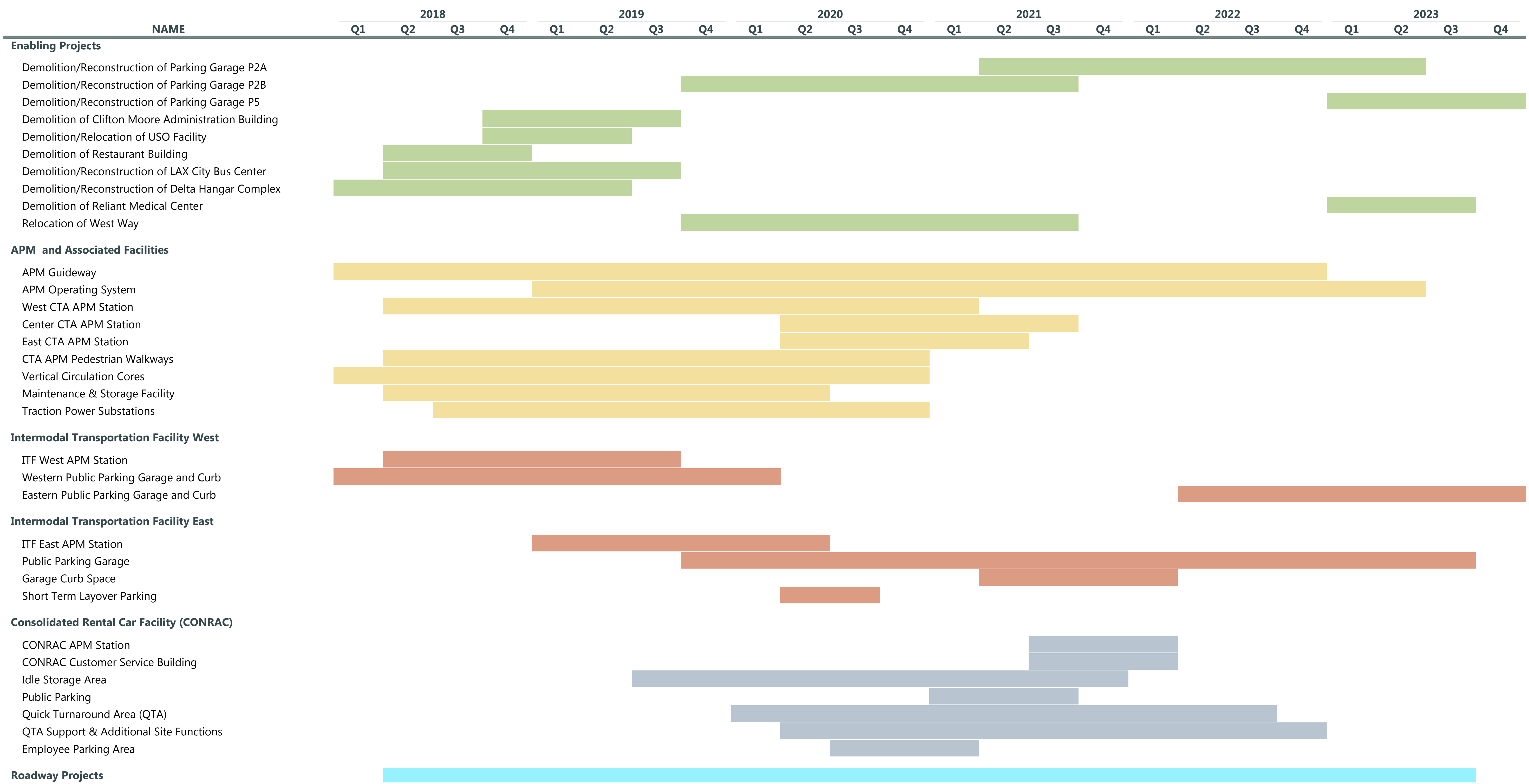
Table 2-15: Construction Phasing



SOURCE: Connico, June 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

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- Facilities to be constructed as part of the ITF West in 2018 and 2019 include the western portion of the public parking garage, the ITF West APM Station, adjacent APM power substation, and internal circulation roadways.
- Construction of the APM would begin in approximately 2018 and conclude in approximately 2022. Construction during this timeframe would include the APM operating system and fixed facilities, consisting of the APM guideway, the six APM stations (three CTA APM stations, West ITF APM station, East ITF APM station, and the CONRAC APM Station), passenger walkways, and the APM MSF. Construction of the APM would also include the necessary enabling projects and roadway modifications necessary for the completion of the alignment.
- Construction of the CONRAC would occur simultaneously with the APM, begin in approximately 2018 and conclude in approximately 2022. Facilities to be constructed in this timeframe include the CONRAC facility, CONRAC APM Station, and internal circulation roadways. Concurrent construction of the CONRAC and APM would provide for both facilities to come online at the same time, thus eliminating the need for short-term operations of shuttle buses between facility open dates.
- The ITF East would be constructed during the first phase of the Project, estimated to begin in approximately 2019 and conclude by end of approximately 2022. Facilities to be constructed in this timeframe include the public parking garage, the ITF East APM Station, adjacent APM power substation, and internal circulation roadways.
- The 6-level eastern section of the public parking garage at the ITF West would begin construction in approximately 2020 and be completed by the end of approximately 2022.
- Major Roadway improvements constructed during the first phase of the Project would include:
    - New ‘A’ Street (W. Century Boulevard to Westchester Parkway/W. Arbor Vitae Street)
    - New ‘B’ Street (New ‘A’ Street to Airport Boulevard)
    - W. 96th Street (Airport Boulevard to Bellanca Avenue)
    - New ‘D’ Street (W. 96th Street to W. Arbor Vitae Street)
    - W. Arbor Vitae Street (Aviation Boulevard to S. La Cienega Boulevard)
    - Aviation Boulevard (W. Century Boulevard to W. Arbor Vitae Street)
    - S. La Cienega Boulevard (W. 98th Street to W. Arbor Vitae Street)
    - New W. 98th Street Segment (Aviation Boulevard to S. La Cienega Boulevard)
    - Extended Concourse Way (W. Century Boulevard to Arbor Vitae Street)
    - Southbound S. Sepulveda Boulevard to World Way (departures and arrivals) Ramps
    - Airport Boulevard (W. 98th Street to W. Arbor Vitae Street)
    - W. 98th Street (Airport Boulevard to Aviation Boulevard)
    - W. Century Boulevard (New ‘A’ Street to Aviation Boulevard)
    - S. La Cienega Boulevard/I-405 On- and Off-Ramps
    - New 'C' Street (Imperial Highway to W. 111th Street)

2.6.1.2 Phase 2

The second phase of construction would mainly include the remaining roadway improvements, as outlined below and shown on **Figure 2-49**. These Project elements are dependent on the APM being operational, thus they are in Phase 2 of the Project. As previously discussed, construction of these elements would begin in approximately 2025 and be completed by approximately 2035.

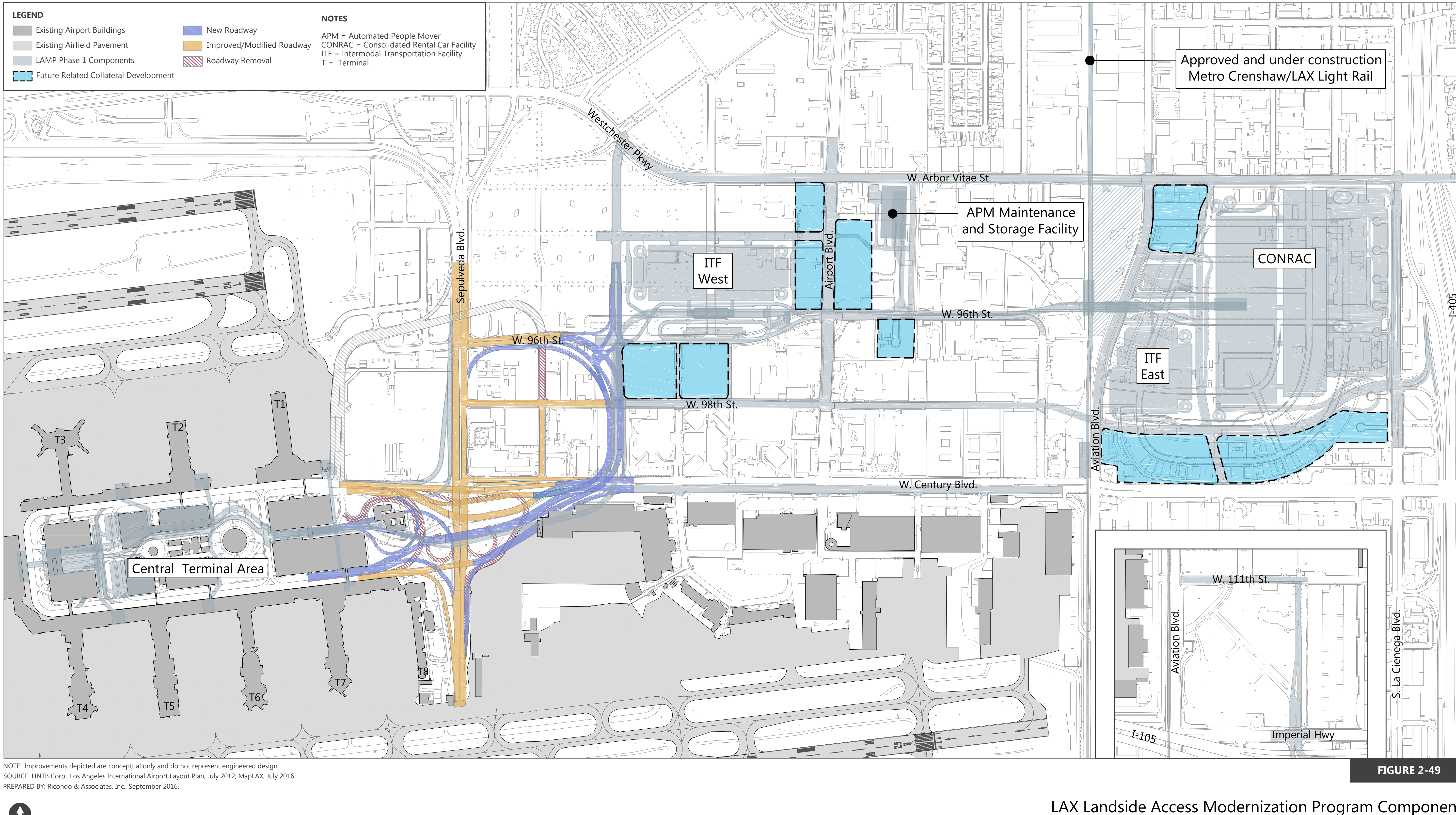
Major Roadway improvements constructed during the second phase of the Project would include:

- S. Sepulveda Boulevard (north of LAX Airport Tunnel to W. 96th Street)
- Northbound S. Sepulveda Boulevard to eastbound W. Century Boulevard Ramp
- Westbound W. Century Boulevard (New 'A' Street to World Way)
- Westbound W. Century Boulevard Viaduct to World Way
- Eastbound World Way (Arrivals) to southbound S. Sepulveda Boulevard Ramp
- Eastbound World Way (Departures) to southbound S. Sepulveda Boulevard Ramp (join existing ramp)
- Eastbound World Way (Arrivals & Departures) to eastbound W. Century Boulevard and to northbound New 'A' Street
- Eastbound World Way (Departures) to northbound S. Sepulveda Boulevard Ramp

The proposed Project would require changes to the configuration and use of existing parcels owned by LAWA where the Project components are proposed to be constructed. These changes would create new parcels owned by LAWA that would be needed for construction laydown and staging areas during construction of the proposed Project in Phase 1, but would be available for future development in Phase 2. Development on these parcels would occur during the second phase of the proposed Project by independent third-party developers. Because LAWA has no specific plans for development of these parcels at this time, the potential for environmental effects from future development of these parcels will be examined at a programmatic level in this EIR. More information is provided in Section 2.7.

2.6.2 CONSTRUCTION STAGING AND EMPLOYEE CONTRACTOR PARKING

To the extent possible, construction laydown, staging areas, and employee contractor parking for the proposed Project would be located adjacent to or within the construction sites for the proposed facilities, as shown on **Figure 2-50**. These construction staging areas may also be used to temporarily relocate parking, rental car operations, or other Airport facilities during construction in order to allow for the orderly construction of the proposed Project elements. To simplify limits of the proposed Project, construction areas have been divided into four zones: 1) the CTA (from the West CTA Station to the Administration East Building); 2) from the Administration East Building (1 World Way) to 6151 W. Century Boulevard; 3) the ITF West and APM MSF area; and 4) the CONRAC. Further information regarding laydown areas and access points during construction is included below.



NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-49

LAX Landside Access Modernization Program Components
Phase 2 (2035)

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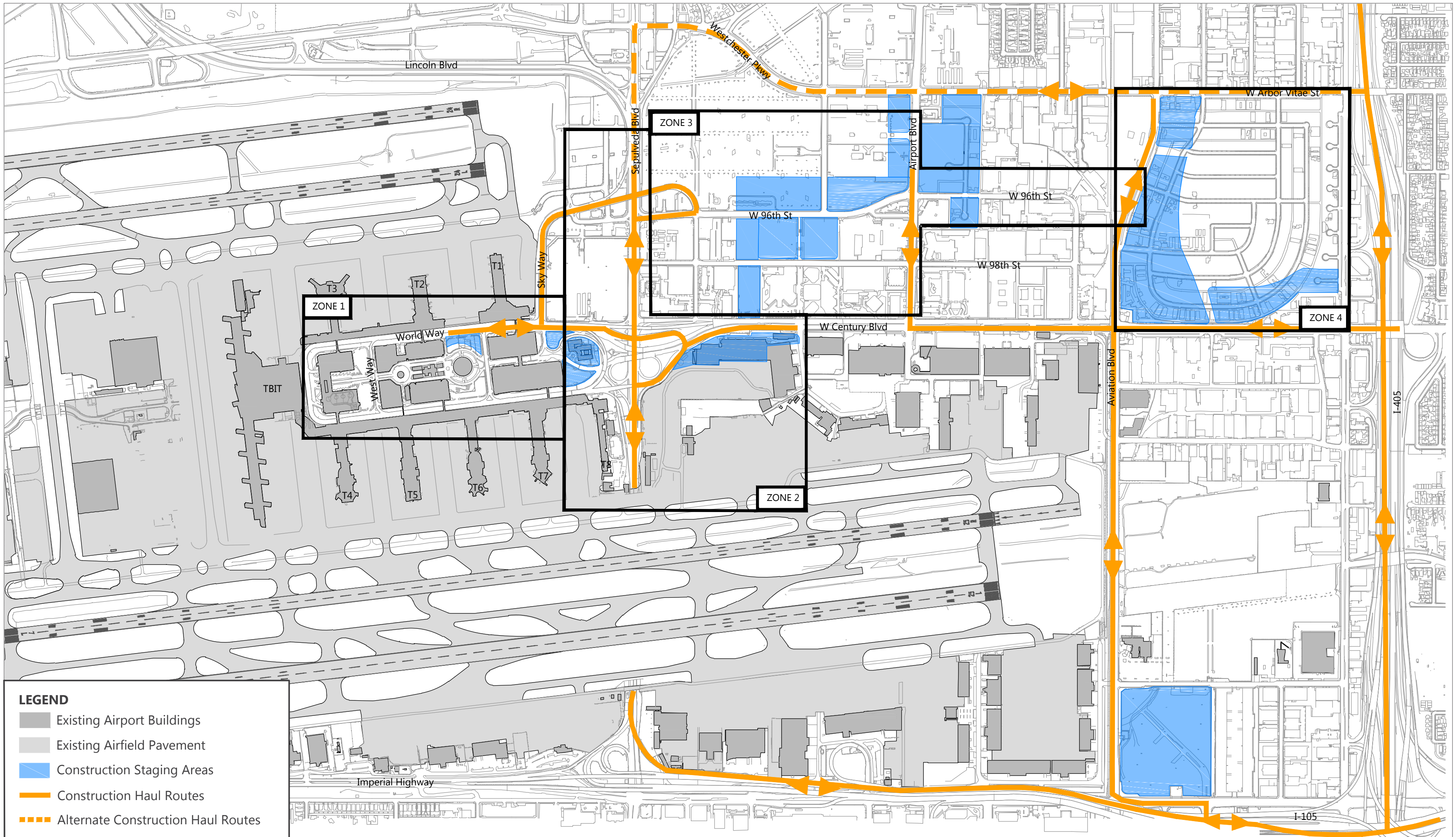

SOURCE: HNTB Corp., Los Angeles International airport Layout Plan, July 2012; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-50

Construction Haul Routes and Staging Areas

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At each construction staging area, LAWA would implement, as necessary, security and screen fencing, surveillance cameras, security personnel, and the locking and securing of equipment. Additionally, the proposed Project would incorporate various temporary construction fencing features to screen much of the construction activities along major public approach and perimeter roadways. Construction employees would be shuttled between construction sites and construction employee parking areas.

2.6.2.1 Zone 1: CTA

The primary staging area for this zone is composed of the parking lots and additional space surrounding the 1961 ATCT and the Administration East Building (to the east of Parking Garages P1 and P7). Access to this staging area would be provided via World Way and Sky Way. Additional construction laydown and contractor employee parking areas would be located adjacent to the CTA, along the western edge of the Park One lot directly east of Terminal 1. Access to this staging area would be provided from W. Century Blvd., World Way, or Sky Way. A third staging/laydown area would be located in the area currently occupied by the Bob Hope Hollywood USO, which is between Parking Garages P1 and 2A and south of Terminal 2. Access to this staging area would be provided from the arrivals level via World Way. The Zone 1 staging areas would be utilized for construction of the APM guideway and stations within the CTA, the passenger walkways and terminal vertical circulation cores, and the demolition and replacement of Parking Garages P2A, P2B, and P5.

2.6.2.2 Zone 2: Administration East Building (1 World Way) to 6151 W. Century Boulevard

The primary staging area for this zone is the area currently occupied by the Delta Hangar Complex, located at 6150 W. Century Boulevard. Demolition of this facility is required for the APM guideway, as previously discussed in Section 2.5.6. Access to this staging area would be provided from Avion Drive. The existing Airport Operations Area (AOA)[37] fence would be relocated to keep construction activities outside of the AOA. The Zone 2 staging area would be utilized for construction of the APM guideway and for some of the roadway improvements.

2.6.2.3 Zone 3: ITF West/APM MSF Area

The primary staging area for this zone is the area currently known as the Belford Area. Access to this staging area would be provided from Airport Boulevard and/or W. 96th Street. Additional staging and laydown areas would be located within the southern portion of the existing Avis leasehold, located immediately west of the Belford Area, on the west side of Airport Boulevard, generally bound by Westchester Parkway to the north, Jenny Avenue to the west, W. 96th Street to the south, and Airport Boulevard to the east. Access to this staging area would be provided from Airport Boulevard and/or Westchester Parkway. The Zone 3 staging areas would be utilized for construction of the APM guideway, the ITF West, APM MSF, and related roadway improvements.

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37 The Airport Operations Area includes paved or unpaved areas used or intended to be used for the unobstructed movement of aircraft, in addition to its associated runways, taxiways, or aprons.

2.6.2.4 Zone 4: CONRAC

The northwest corner and southern portion of the site currently identified as Manchester Square would be available for contractor staging, laydown, and parking. Access to the northwest staging site would be from Aviation Boulevard and/or W. Arbor Vitae Street. Access to the southern staging area would be provided from Aviation Boulevard, La Cienega Boulevard, and/or W. Century Boulevard. The Zone 4 staging area would be utilized for construction of the CONRAC, ITF East, and related roadway improvements.

2.6.2.5 Continental City

The existing Continental City site, located at the northeast corner of Aviation Boulevard and Imperial Highway, is currently utilized by LAWA for construction staging and laydown. This site would also be used for construction staging and laydown, as well as for a concrete batch plant, which is permitted at this site.

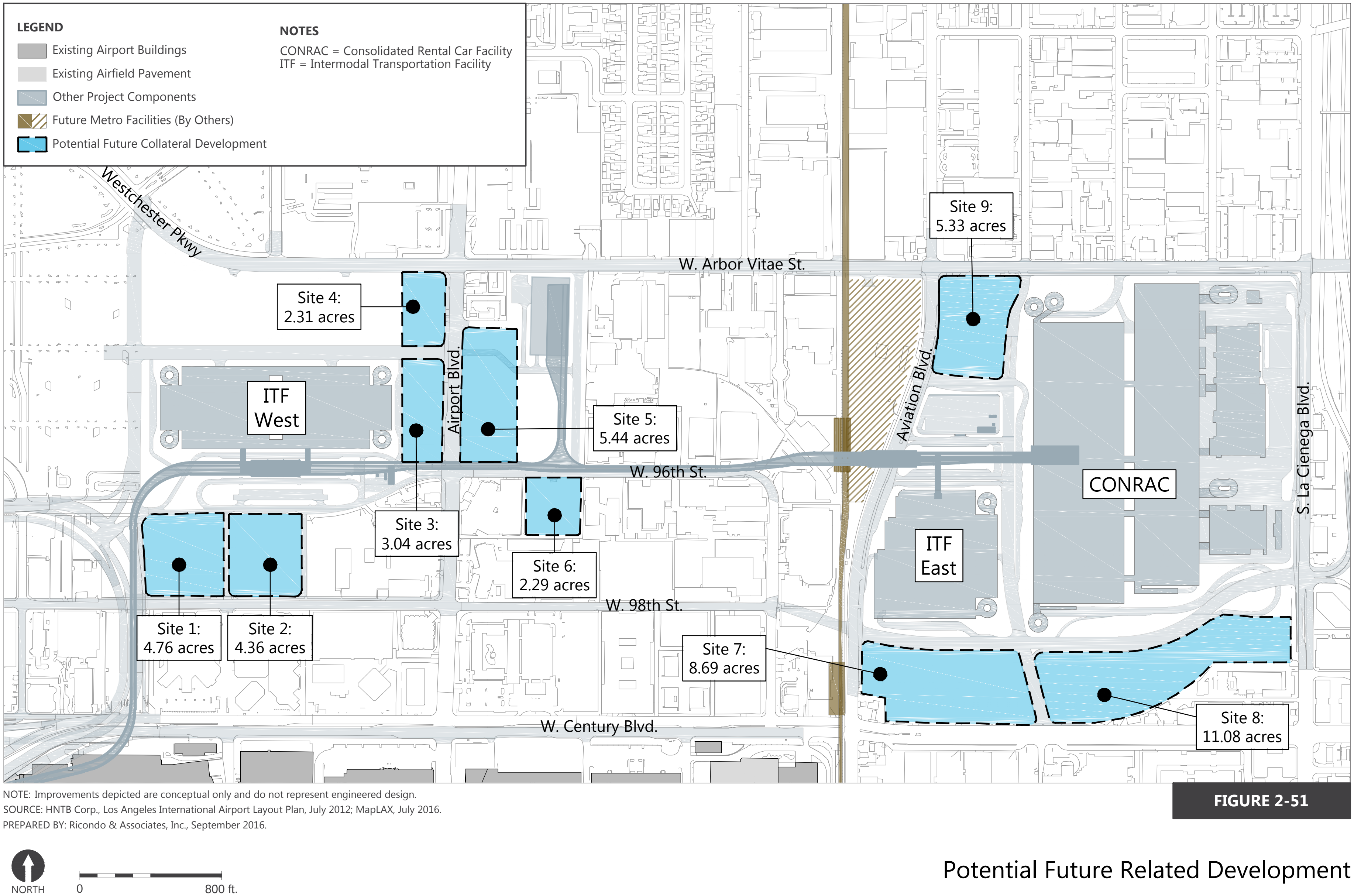
2.6.3 CONSTRUCTION HAUL ROUTES

Designated delivery and haul routes would be established for the proposed Project consistent with the haul routes currently used for LAX projects. Figure 2-50 delineates the delivery and haul routes proposed to be used during construction of the proposed Project. As shown, the primary delivery routes would utilize I-405, I-105, and Sepulveda Boulevard. For materials delivered to and stored at designated construction staging areas, the contractor haul routes to and from the Project area would be generally on public streets, except for construction staging areas within or adjacent to the CTA.

2.7 Potential Future Related Development

The proposed Project would require changes to the configuration and use of existing parcels owned by LAWA where the new LAX ground transportation facilities are proposed to be constructed. Associated changes to the existing land use and zoning designations are proposed, as further discussed in Section 2.8. These changes would create new parcels owned by LAWA that would be needed for construction laydown and staging areas during construction of the proposed Project until completion of Phase 1, but would be later available for future development following the construction period. The parcels proposed for future related development are located adjacent to the CONRAC, ITF East, APM MSF, and ITF West, and are shown on **Figure 2-51**.

Because LAWA has no specific plans for development of these parcels at this time, the potential for environmental effects from future development of these parcels will be examined at a programmatic level in this EIR. Development of these areas would occur after construction of the proposed components of the Project. At such time as individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary.



NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-51

Potential Future Related Development

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These parcels are projected to accommodate up to 900,000 sq. ft. of commercial development. Such future development is envisioned to support the needs of passengers, visitors, employees, and guests of hotels in the area. In the CONRAC area, the land located between W. 98th Street and W. Century Boulevard (Sites 7 and 8) and the land located on the corner of Aviation Boulevard and W. Arbor Vitae Street (Site 9) would be available after construction of the Project facilities is completed. For purposes of analysis, up to 450,000 sq. ft. of commercial development is projected in these areas. In addition, the areas located south of the ITF West along W. 98th Street (Sites 1 and 2) and along Airport Boulevard (Sites 3, 4 and 5) would be available for future development, as would portions of the Belford area located south of W. 96th Street (Site 6). For purposes of analysis, up to 450,000 sq. ft. of commercial development is projected in this area.

Land use designations (see Section 2.8) and design guidelines (see Appendix B) have been developed to guide the future development of these parcels. Areas along W. Century Boulevard and Airport Boulevard would be developed consistent with commercial uses by providing services to meet the needs of Airport passengers and visitors, as well as guests of the nearby hotels on W. Century Boulevard. The portion of the Belford area south of W. 96th Street and the area between W. 96th Street and W. Arbor Vitae Street would be available to provide Airport-related support uses or commercial development. LAWA prepared an illustrative, conceptual plan for future development in consultation with local stakeholders and generated projections regarding the size and type of the potential future related development, as shown in **Table 2-16**. Other possible amenities could include: theaters; health and fitness centers; layover facilities; galleries or museums; or community uses.

Table 2-16: Potential Future Related Development

POTENTIAL USE	APPROXIMATE SIZE (SQ. FT.)
Office Space	300,000
Hotel (approximately 400 rooms)	300,000
Commercial Space	200,000
Conference Center	100,000
Total:	**900,000**

SOURCE: SOM, *LAX LAMP Residual Land Study*, March 10, 2016.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

2.8 Entitlements

Implementation of the proposed Project would include, among other things, approval of amendments to plans regulating land use in the area, including the City of Los Angeles General Plan and the LAX Specific Plan, zone changes, and the reconfiguration of existing parcels. The proposed Project would require amendments to the LAX Plan and Westchester-Playa del Rey Community Plan, which, along with the Port of Los Angeles Plan and 34 other local Community Plans, make up the City of Los Angeles General Plan. These amendments are proposed to conform these plans, as necessary, to reflect updated boundaries of Airport property and the location of the proposed Project components and to provide the technical amendments necessary for the construction and operation of the Project. The proposed Project would also require the reconfiguration of existing parcels, creation of new tract maps, haul routes, and zone changes. In addition to administrative and Project-related changes, implementation of the revisions to the LAX Plan and LAX Specific Plan would result in removal of language from the plans regarding limitation on the number of off-Airport parking spaces; limitation on the number of gates at LAX; and the FlyAway service. Further description and analysis of required entitlements is presented in Chapter 7, *Evaluation of Amendments to the LAX Plan and LAX Specific Plan*.

2.8.1 GENERAL PLAN AMENDMENT

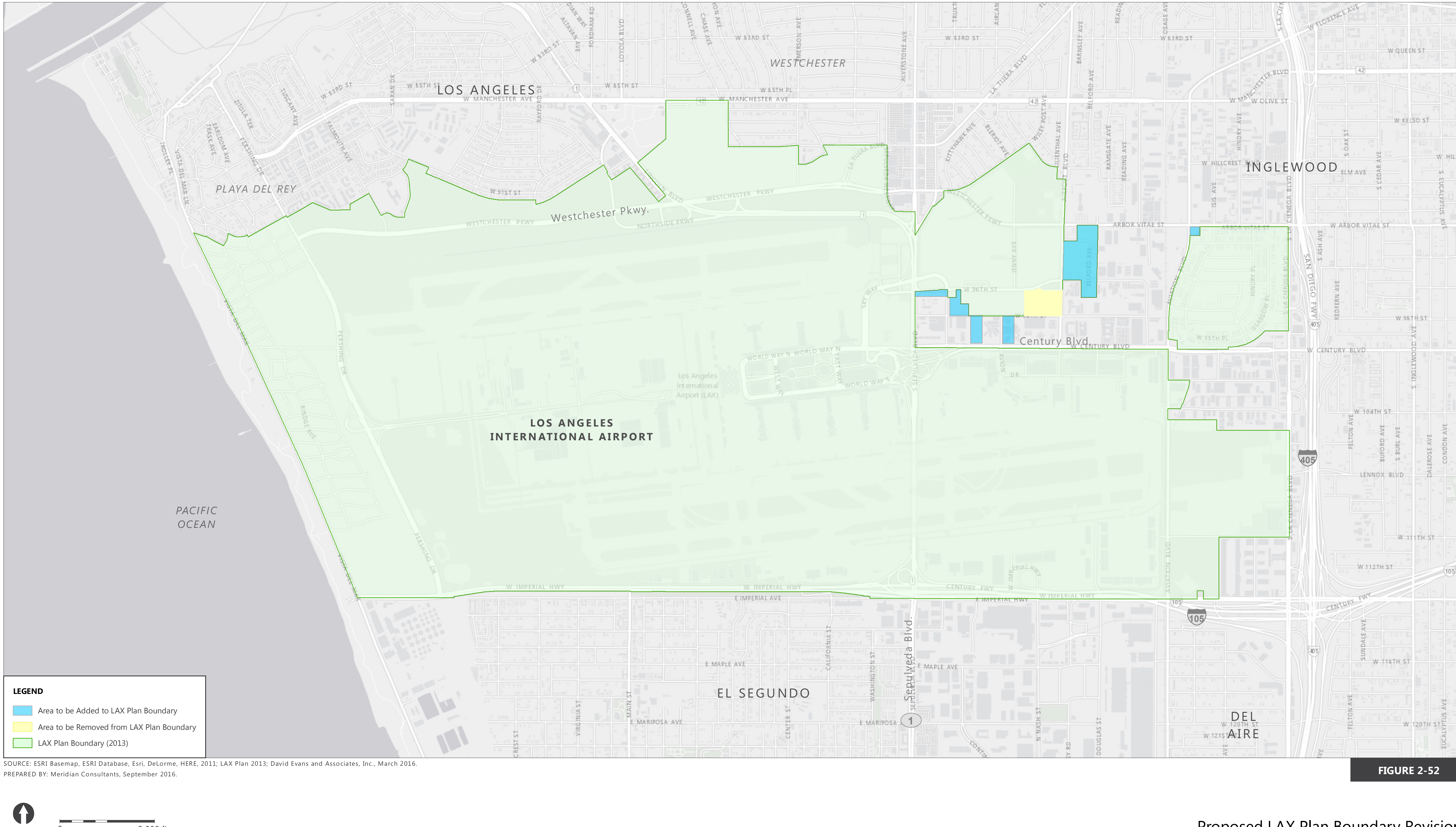
The City of Los Angeles General Plan consists of the General Plan Framework Element and other elements required by state law, including the Land Use Element and Transportation Element. In the City of Los Angeles, the General Plan Land Use Element consists of 35 local Community Plans, the LAX Plan, and the Port of Los Angeles Plan; the LAX Plan and Westchester-Playa del Rey Community Plan are two of the City's local Community Plans in the LAX area. The proposed Project would also include modifications to the Transportation Element, also known as the Mobility Plan 2035. Proposed amendments to the separate components of the City's General Plan are discussed below.

2.8.1.1 LAX Plan Amendment

The LAX Plan is comprised of four general areas: Airport Airside, Airport Landside, LAX Northside, and Open Space. In addition, the Belford Special Study Area, located east of Airport Boulevard and south of W. Arbor Vitae Street, is designated for Medium Residential and Regional Center Commercial land uses; the LAX Plan states that the Belford Special Study Area is subject to additional study prior to any new development. Implementation of the proposed Project would require amendments to the Airport Landside area of the LAX Plan to include descriptions of the proposed transportation facilities, as described in Section 2.4. Text changes to the LAX Plan include updating the Vision Specific Plan Amendment Study discussion; updating the goals and objectives to reflect the proposed Project; adding a description of a new Airport Landside Support Area; updating policies to reflect the proposed Project and other programs; and removing text regarding projects that are no longer relevant (see Appendix C and Chapter 7). In addition, the Belford Special Study Area would be updated to reflect the proposed use of this area under the Project: Airport Landside and Airport Landside Support. Amendments would include changes to the text of the LAX Plan as well as updates to the associated figures. Plan Areas would be updated to include: additional areas that are currently located in the Westchester-Playa del Rey Community Plan; areas in which the proposed facilities would be located; and to change the designation of the Belford Special Study Area to Airport Landside (see **Figure 2-52**). In addition, LAX Plan maps and diagrams would be updated to reflect the proposed roadway changes.

2.8.1.2 Westchester-Playa del Rey Community Plan Amendment

The proposed Project would require the acquisition of some properties currently included in the Westchester-Playa del Rey Community Plan. In addition, the proposed Project would alter some roadway configurations within the Westchester-Playa del Rey Community Plan area. Therefore, the Project would require amendments to the maps in the Westchester–Playa del Rey Community Plan to conform the boundary of this plan area to the revised boundary for the LAX Plan and to reflect roadway changes.



SOURCE: ESRI Basemap, ESRI Database, Esri, DeLorme, HERE, 2011; LAX Plan 2013; David Evans and Associates, Inc., March 2016.
PREPARED BY: Meridian Consultants, September 2016.

FIGURE 2-52

Proposed LAX Plan Boundary Revisions

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In addition, as shown in Figure 2-52**,** the property at the northwest corner of Airport Boulevard and W. 98th Street would be removed from the LAX Plan and added to the Westchester-Playa del Rey Community Plan. The Westchester-Playa del Rey Community Plan map would need to be amended to include this property with an assigned land use designation.

2.8.1.3 Mobility Plan 2035 Amendment

The proposed Project would require amendments to the Citywide General Plan Circulation System to maintain consistency with the proposed classification of streets modified as part of the proposed Project. The proposed reclassification of roadway segments is identified in **Figure 2-53**. The City's *Mobility Plan 2035* contains several policy initiatives including establishing new street standards to provide safe and efficient transportation for pedestrians, bicyclists, transit riders, and car and truck drivers; target greenhouse gas reductions through a more sustainable transportation system; increase the use of technology and wayfinding to expand awareness of and access to parking options and a host of multi-modal options (car share, bicycle share, car/van pool, bus and rail transit, shuttles, walking, bicycling, and driving; and expand the role of the street as a public place).[38]

The *Mobility Plan 2035* includes a Bike Plan for the City of Los Angeles, including areas surrounding the proposed Project elements. The existing Bike Plan in the vicinity of LAX includes proposed bike lanes on Westchester Parkway/W. Arbor Vitae Street, Aviation Boulevard, and W. 96th Street (see **Figure 2-54**). Under the proposed Project, bicycle access would remain on Aviation Boulevard; however, there is insufficient right-of-way on W. Arbor Vitae Street (between Airport Boulevard and Aviation Boulevard) and on W. 96th Street to provide bicycle lanes. Therefore, LAWA is proposing to modify the Bike Plan in this area, as shown on **Figure 2-55**), and to increase the multi-model options and connections to the regional transit system for residents and employees in the area. Mobility Plan figures would also need to be revised to reflect changes in roadway layout resulting from the proposed Project.

2.8.2 LAX SPECIFIC PLAN AMENDMENT

The LAX Specific Plan establishes the development standards consistent with the LAX Plan for the Airport and surrounding area. It is the principal mechanism by which the goals and objectives of the LAX Plan are achieved and the policies and principles are implemented. The proposed Project would require amendments to the LAX Specific Plan to update the text of the plan (see Appendix D and Chapter 7) to reflect the proposed transportation components. Amendments would include: changes in the text of the LAX Specific Plan to facilitate implementation of the programs and policies in the plan; the addition of an Airport Landside Support Subarea; reorganization of text for consistency and clarity; removal of the parking regulations which are specific to the LAX Master Plan; clarification of which parcels within the LAX Specific Plan are subject to the trip cap; and text on the LAX Design Guidelines (see Appendix B), as well as updates to the associated figures. The LAX Specific Plan would also be amended to allow the Executive Director to authorize the sale, dispensing, and consumption of alcohol beverages within sterile areas of the Airport or related off-site sterile areas without having to obtain a Conditional Use Permit from the Department of City Planning.

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[38] City of Los Angeles, Department of City Planning, *Mobility Plan 2035, An Element of the General Plan*, adopted January 20, 2016, Available: http://planning.lacity.org/documents/policy/mobilityplnmemo.PDF.

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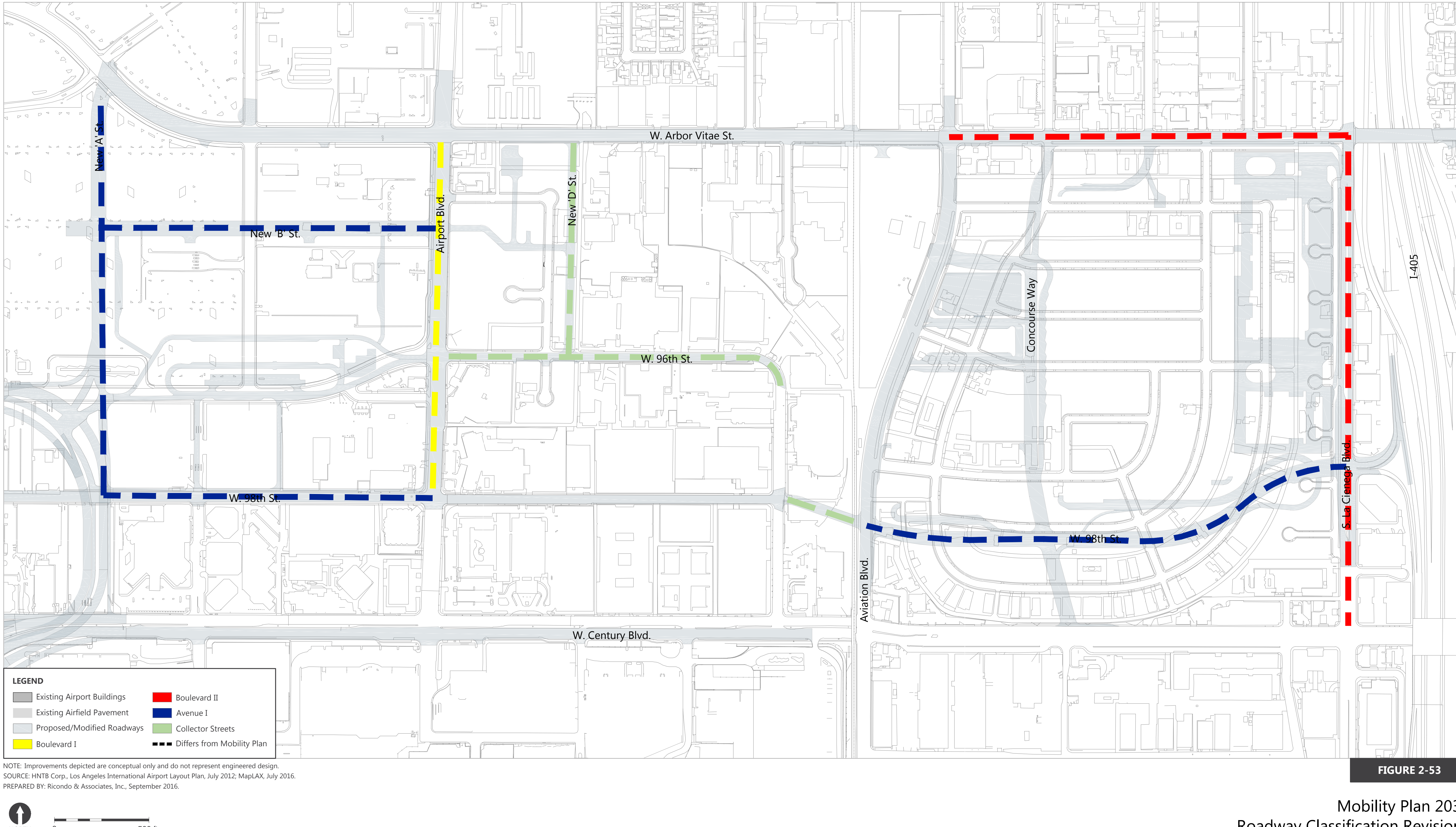

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-53

Mobility Plan 2035
Roadway Classification Revisions

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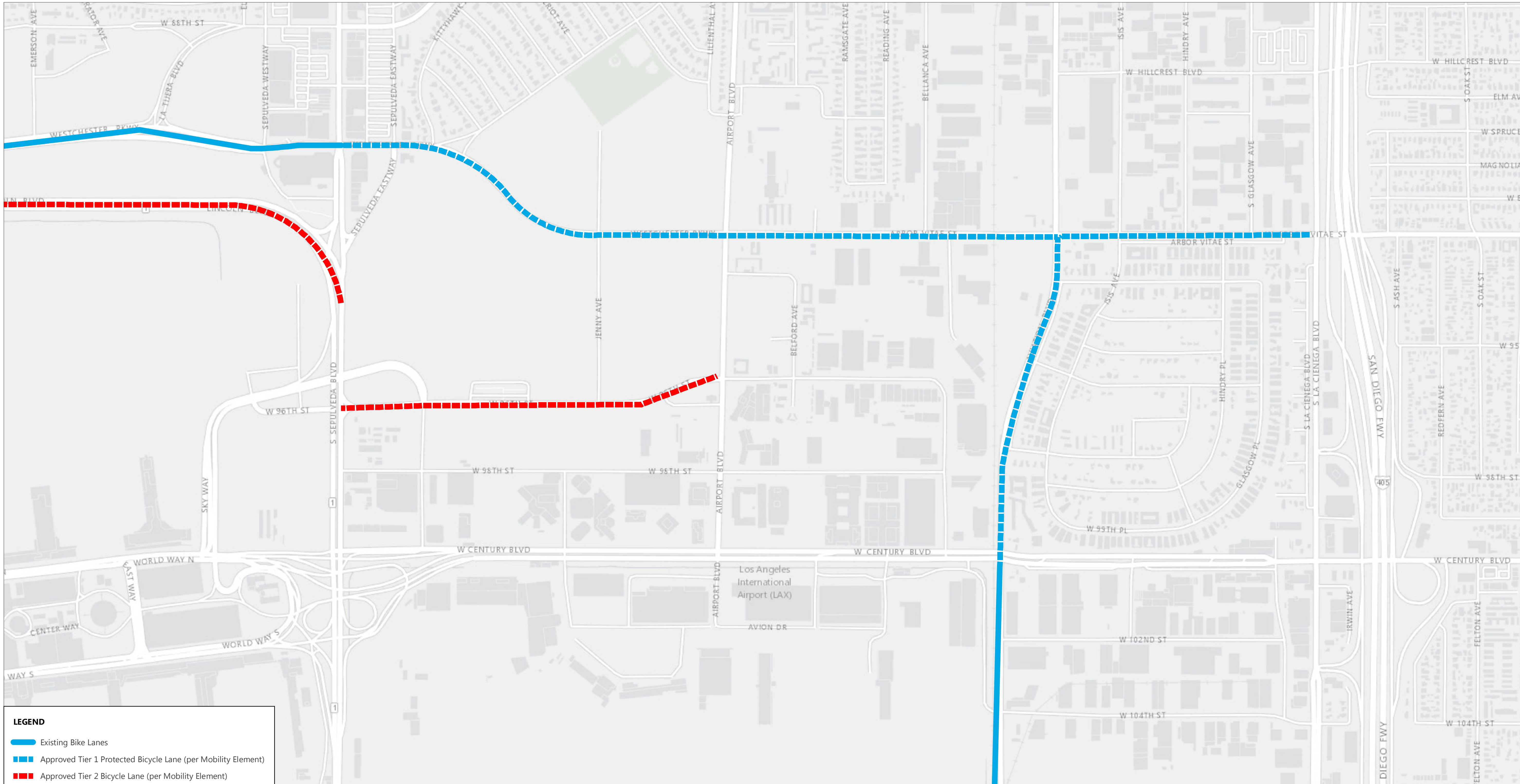

LEGEND

- Existing Bike Lanes
- Approved Tier 1 Protected Bicycle Lane (per Mobility Element)
- Approved Tier 2 Bicycle Lane (per Mobility Element)

SOURCES: ESRI Basemap, ESRI Database, Esri, DeLorme, HERE, 2011; City of Los Angeles, General Plan, Mobility Element 2035, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 800 ft.

EXHIBIT 2-54

Mobility Plan 2035
Existing Bicycle Plan

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Section 7.H, Additional Study Requirements, would be deleted in its entirety. Section 7.H.1 states that LAWA shall initiate a Specific Plan Amendment Study with corresponding environmental analysis in compliance with CEQA if the annual aviation activity forecasts that the annual passengers for that year are anticipated to exceed 78.9 million. As LAWA anticipates that annual passengers will meet or exceed 78.9 million in 2016 or 2017, this EIR is intended to fulfill the requirement in Section 7.H.1 for a Specific Plan Amendment Study with corresponding environmental analysis. Specifically, the proposed Project includes amendments to the LAX Specific Plan necessary to implement the proposed Project consistent with current projected growth forecasts, and analyzes those impacts. Thus, upon certification of the LAX Landside Access Modernization Program EIR and approval of the LAX Landside Access Modernization Program, the requirements of Section 7.H.1 will have been fulfilled, and are thus proposed for deletion.

Section 7.H.2 of the LAX Specific Plan requires LAWA to initiate an LAX Domestic Passenger Survey/Study and corresponding Airline Survey/Study if the annual aviation activity forecasts that the annual passengers for that year are anticipated to exceed 78.9 million. As stated above, LAWA anticipates that annual passengers will meet or exceed 78.9 million in 2016 or 2017. Thus, LAWA will conduct the required surveys in 2016 and 2017.

The LAX Specific Plan Area diagrams would be updated to include the additional areas in which the proposed facilities would be located and for consistency with the LAX Plan (see **Figure 2-56**). The LAX Specific Plan Subarea map would be updated to designate the areas of the proposed components as Airport Landside Subarea, and future related development as Airport Landside Support Subarea (see **Figure 2-57**).

In addition, LAX Specific Plan maps and diagrams would be updated to reflect the proposed roadway changes.

2.8.3 ZONE CHANGES

The proposed Project would require changes to the existing zoning of areas within the Project site. The LAX Zone, as defined in Section 12.19.1 of the Los Angeles Municipal Code, was created to implement the LAX Specific Plan. All land included in the LAX Specific Plan Area is designated LAX Zone. **Figure 2-58** and **Table 2-17** shows the parcels to be re-zoned to LAX Zone.

In addition, as shown in Figure 2-52**,** the property at the northwest corner of Airport Boulevard and W. 98th Street would be removed from the LAX Plan and added to the Westchester-Playa del Rey Community Plan. This property, identified in Table 2-17 would be rezoned from LAX zone to a zone consistent with its land use designation.

2.8.4 SUBDIVISION ACTIONS

The proposed Project would require changes to the configuration and use of existing parcels owned by LAWA where construction of the Project components are proposed. Reconfiguration of existing parcels in the vicinity of the ITF West, ITF East, and CONRAC is proposed to accommodate the proposed facilities. Two tract maps would be prepared and processed to create parcels for these facilities. Lot line adjustments and other minor subdivision actions would also be processed, as deemed necessary. **Figure 2-59** shows the proposed tract map for the ITF West/Belford area, and **Figure 2-60** shows the proposed tract map for the ITF East/CONRAC area.

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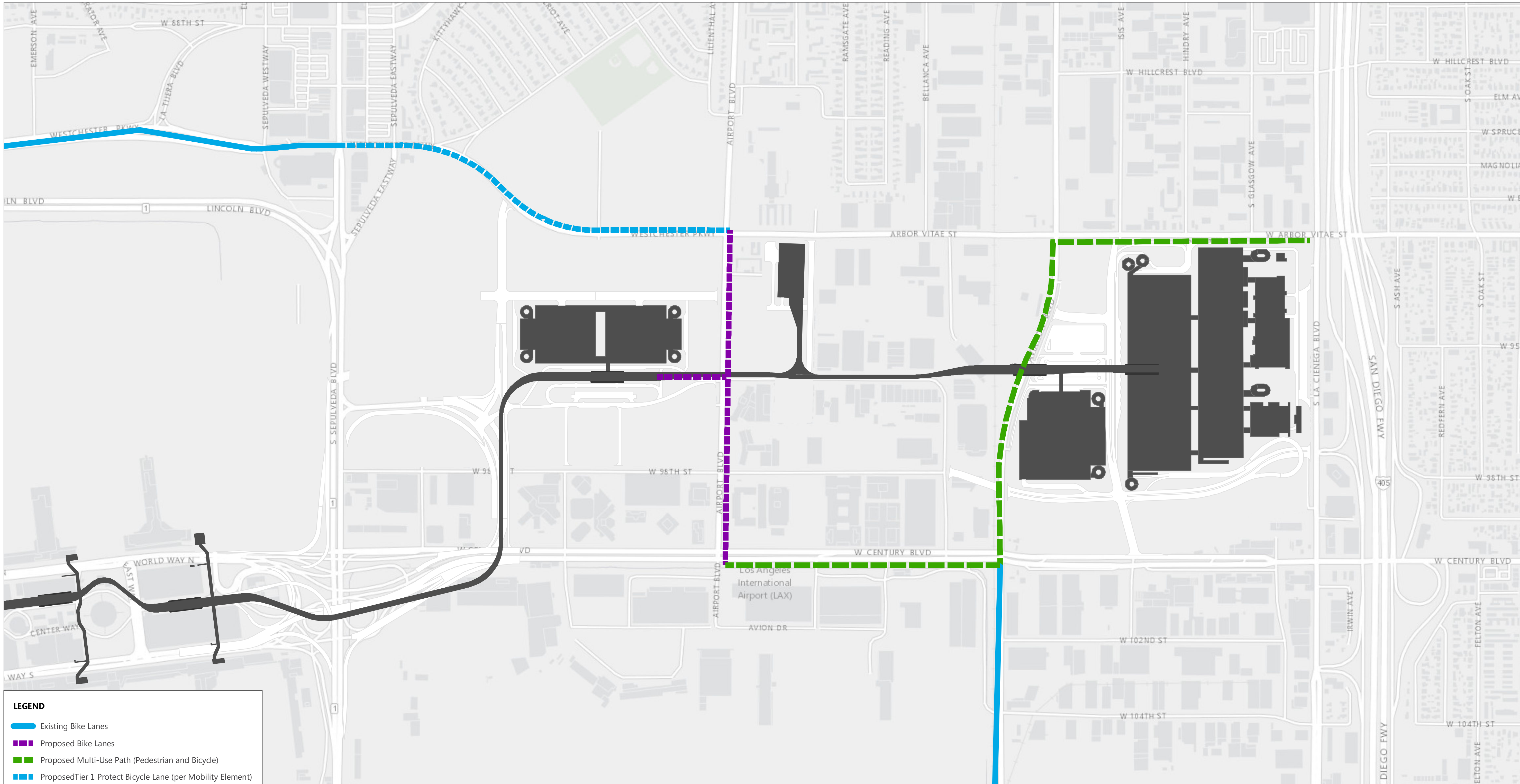

SOURCES: ESRI Basemap, ESRI Database, Esri, DeLorme, HERE, 2011; City of Los Angeles, General Plan, Mobility Element 2035, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 800 ft.

FIGURE 2-55

Proposed Amendment to Mobility Plan
2035 Bicycle Plan

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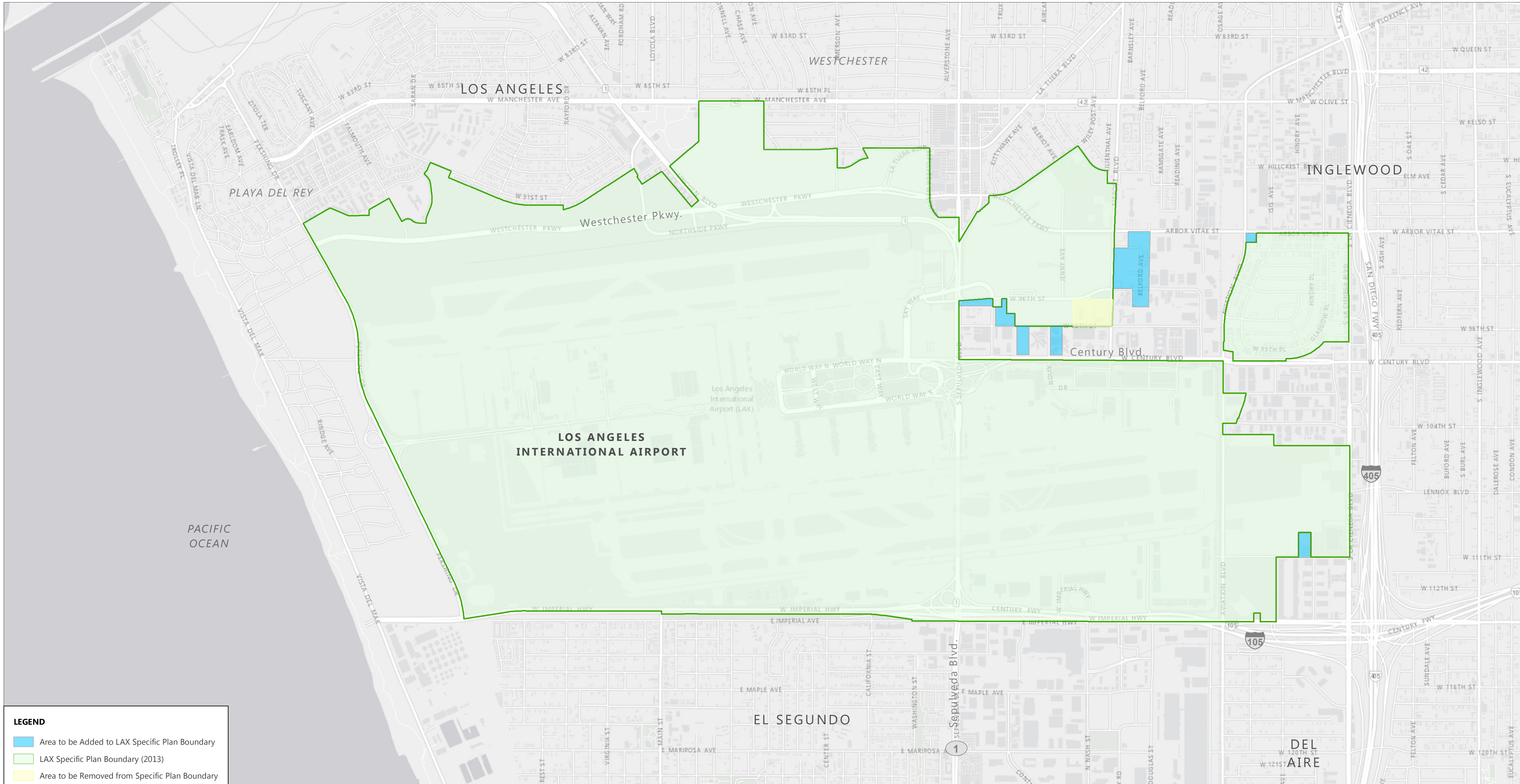

SOURCE: LAX Specific Plan 2013; David Evans and Associates, Inc., March 2016; ESRI Basemap, ESRI Database, Esri, DeLorme, HERE, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-56

NORTH 0 2,000 ft.

Proposed LAX Specific Plan Boundary Revisions

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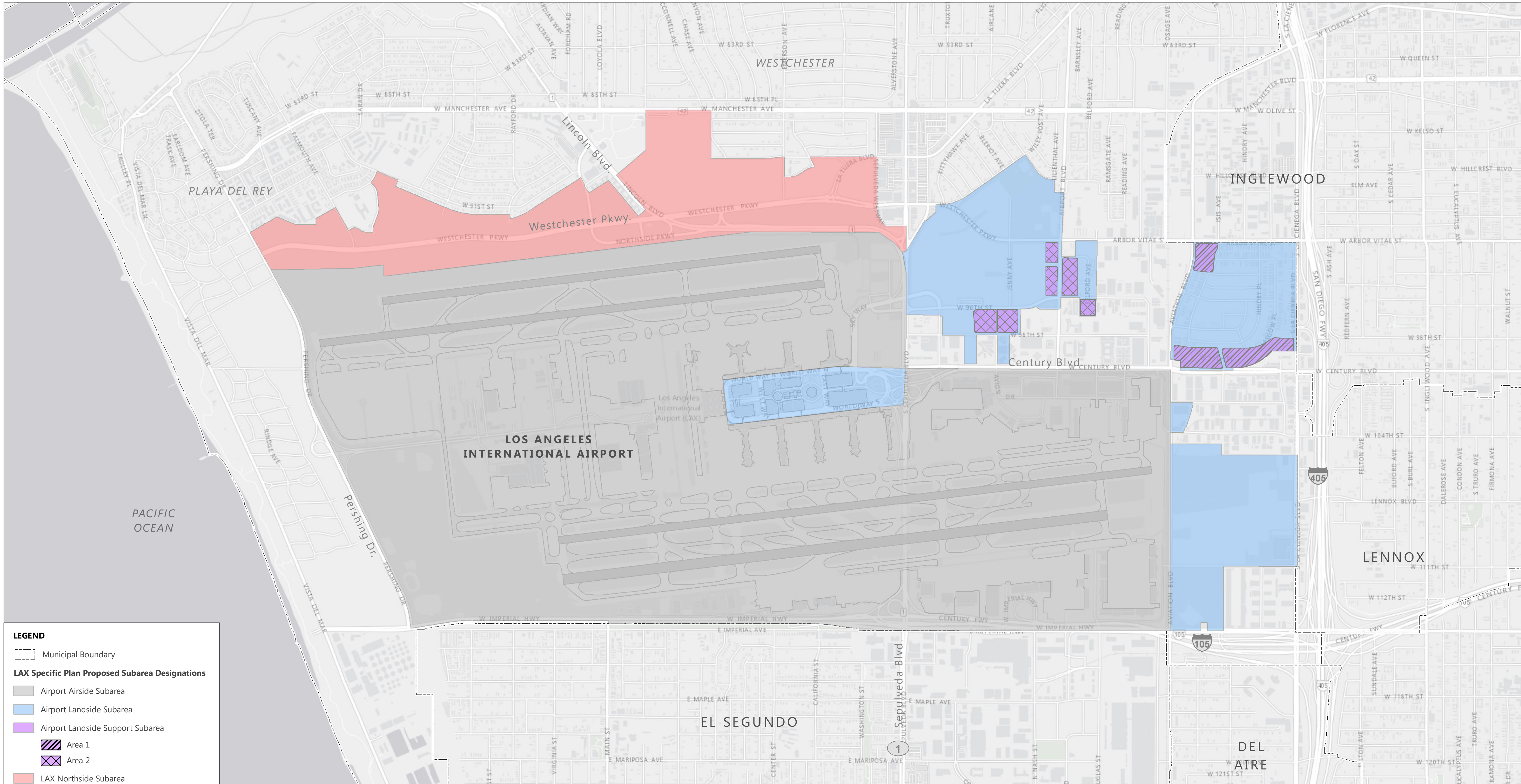

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, airport property boundary); LAX Specific Plan 2013; David Evans and Associates, Inc., March 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH
0 2,000 ft.

FIGURE 2-57

LAX Specific Plan
Proposed Subareas

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Table 2-17: Parcels to be Rezoned LAX Zone

ASSESSORS PARCEL NUMBER	STREET ADDRESS	EXISTING ZONING
4124025049	9600 S. Sepulveda Boulevard & 6250 - 6286 W. 96th Street	C2-2
4124027029	6155 W. 98th Street	C2-2
4124027031	6200 W. 96th Street	C2-2
4124027032	6206 W. 96th Street	C2-2
4124027900	6175 W. 98th Street & 9750 S. Vicksburg Avenue	C2-2
4124027906	6145 W. 98th Street	C2-2
4124030901/4124030902	6053 W. Century Boulevard	C2-2
4125022900	9300 S. Belford; 5819 W 93rd Street	R3-1
4125022902	5832 W. Arbor Vitae Street	R3-1
4125022904	5826 W. Arbor Vitae Street	R3-1
4125022905	9306 S. Belford Avenue	R3-1
4125022906	9406 S. Belford Avenue	R3-1
4125022907	5838 W. Arbor Vitae Street	R3-1
4125022908	5844 W. Arbor Vitae Street	R3-1
4125022909	9400 S. Belford Avenue	R3-1
4125022910	5841 & 5847 W. 93rd Street	R3-1
4125022911	5820 W. Arbor Vitae Street	R3-1
4125022912	5812 - 5818 Arbor Vitae Street	R3-1
4125022913	5850 - 5858 Arbor Vitae Street	R3-1
4125022914	5833 - 5839 W. 93rd Street	R3-1
4125022915	5823 - 5829 S. Belford Avenue	R3-1
4125022916	9312-9324 S. Belford Avenue	R3-1
4125023007	9520 S. Belford Avenue	R3-1
4125023900	9418 - 9422 S. Belford Avenue	R3-1
4125023906	9625-9629 S. Belford Avenue	R3-1
4125023908	9500-9504 S. Belford Avenue	R3-1
4125023909	9508 - 9512 S. Belford Avenue	R3-1
4125023913	9605- 9611 S. Belford Avenue	R3-1
4125023915	9426 - 9436 S. Belford Avenue	R3-1
4125023916	9606 S. Belford Avenue	R3-1
4125023917	9514 S. Belford Avenue	R3-1
4125023918	5814 W. 96th Street; 9600 S. Belford Avenue	R3-1
4125023919	9624- 9628 S. Belford Avenue	R3-1
4125023920	9612 & 9614 S. Belford Avenue	R3-1
4125023921	9618 - 9622 S. Belford Avenue	R3-1
4125023926	5830 W. 96th Street & 9601 S. Belford Avenue	R3-1
4125023927	9630 - 9635 S. Belford Avenue	R3-1
4125023928	9619 - 9623 S. Belford Avenue	R3-1
4125023929	9412 - 9416 S. Belford Avenue	R3-1
4125023930	9613 S. Belford Avenue	R3-1
4128002015	9200 Aviation Boulevard	C2-1
4129037037	5343, 5353, 5401, & 5525 W. Imperial Highway; 5324 & 5380 W. 111st Street	M2-1

SOURCE: Ricondo & Associates, Inc., July 2016.
PREPARED BY: Meridian Consultants, LLC., July 2016.

[Draft]

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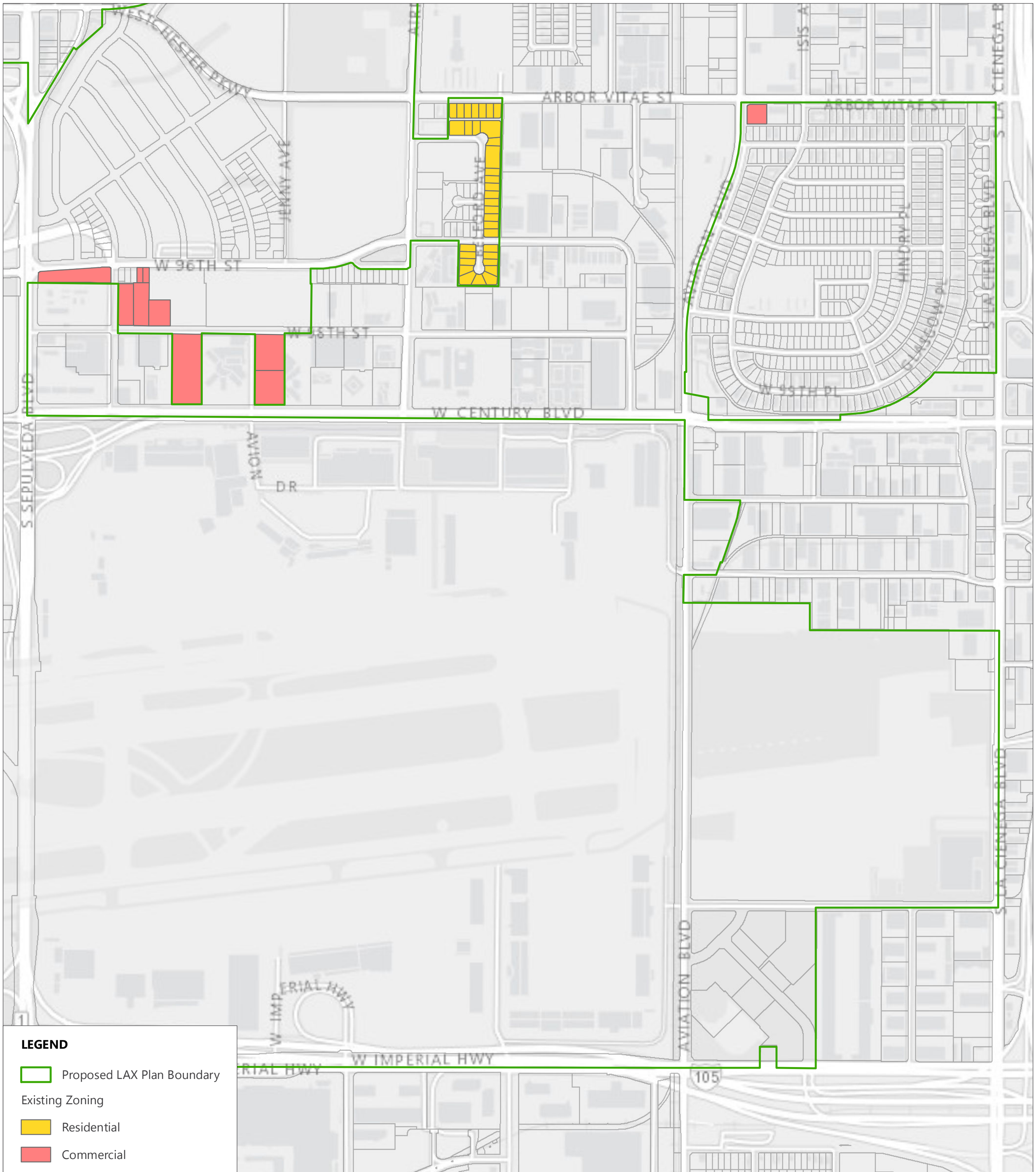

SOURCE: ESRI Basemap, ESRI Database, Esri, DeLorme, HERE, 2011; City of Los Angeles Department of City Planning.
PREPARED BY: Meridian Consultants, LLC, September 2016.

FIGURE 2-58

NORTH 0 1,200 ft.

Parcels to be Re-zoned to LAX Zone

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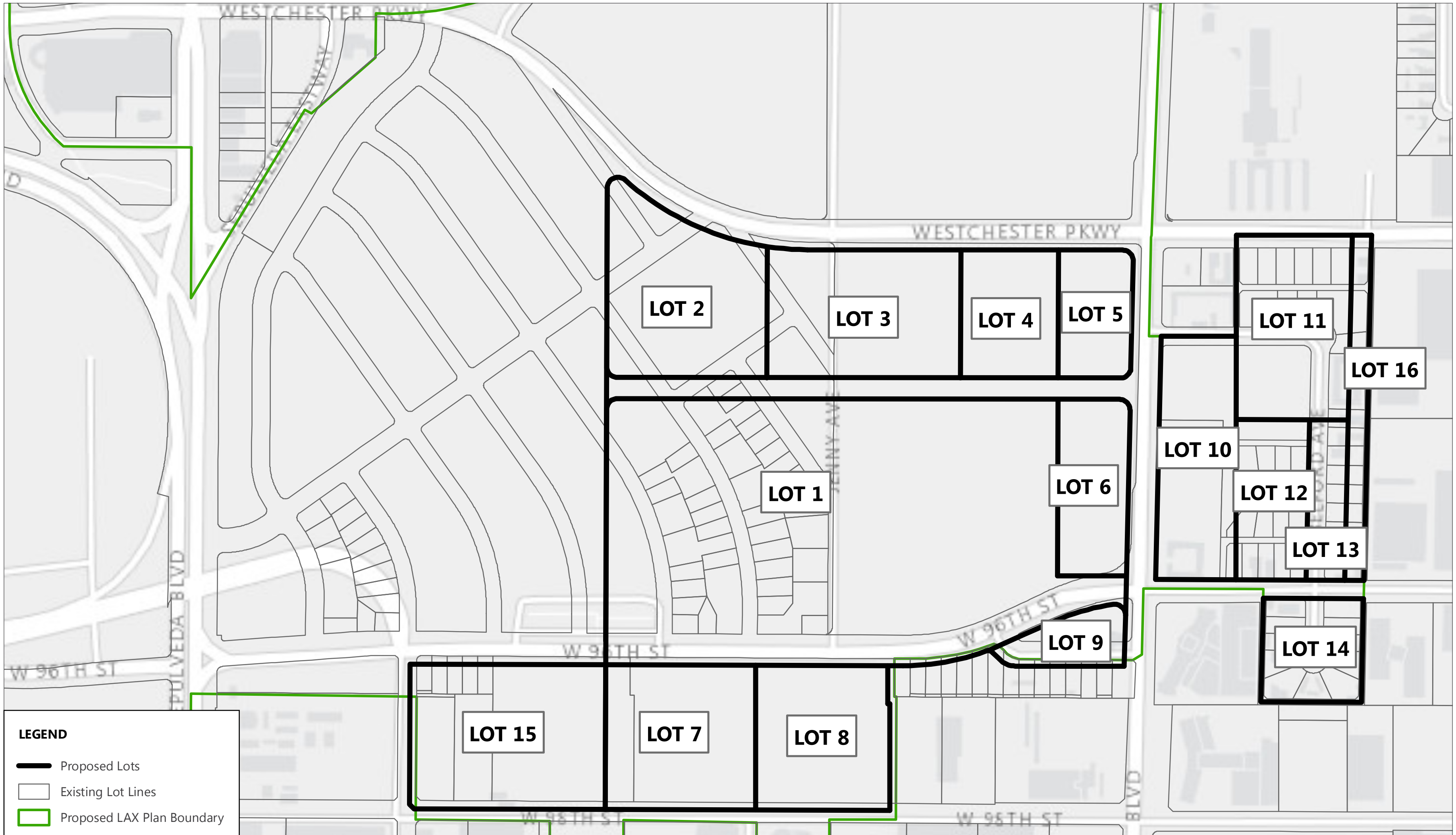

SOURCES: ESRI Database, Esri, DeLorme, HERE, 2011; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-59

NORTH 0 500 ft.

Proposed ITF West/Belford Area Tract Map

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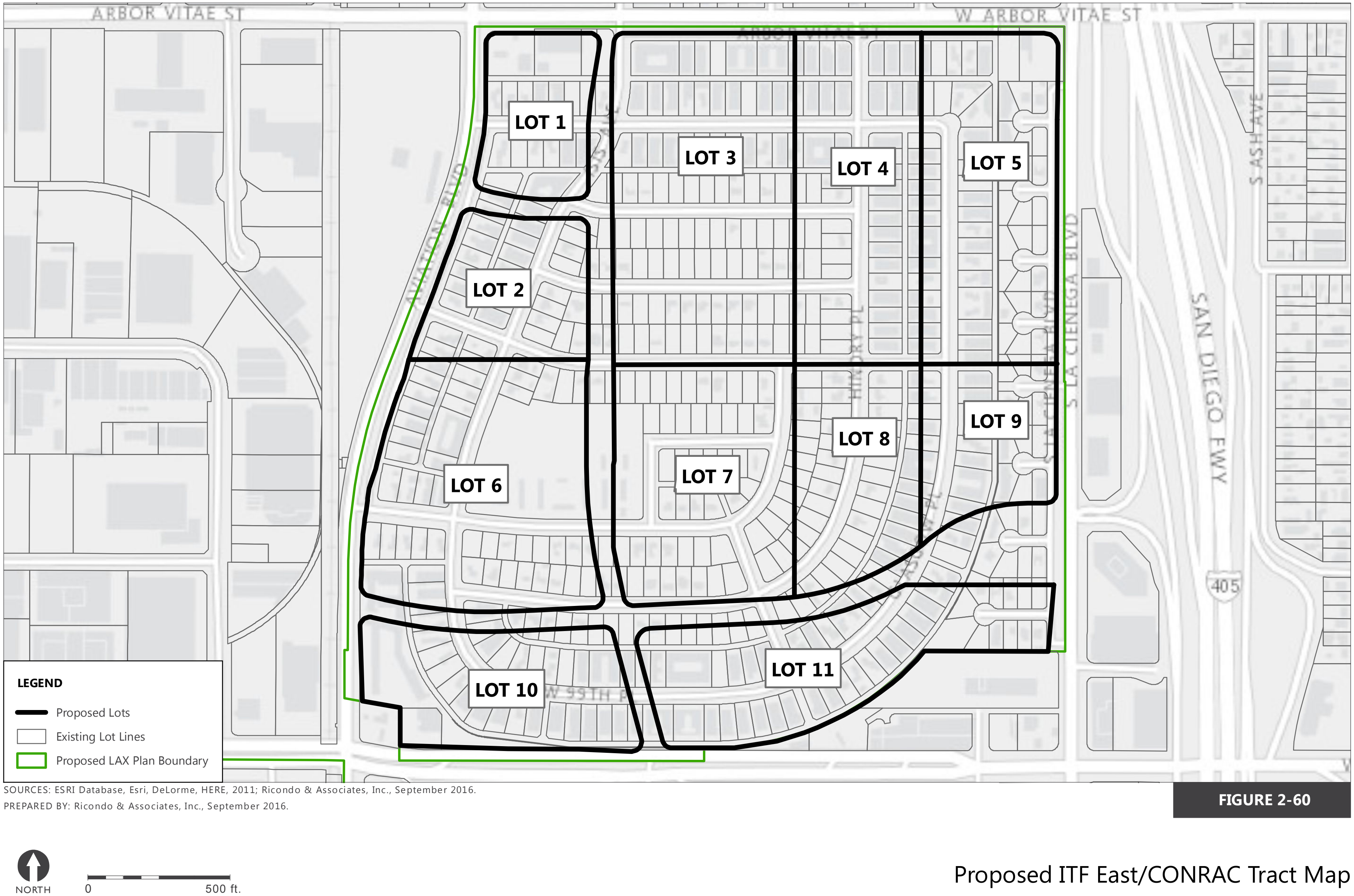

SOURCES: ESRI Database, Esri, DeLorme, HERE, 2011; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 2-60

Proposed ITF East/CONRAC Tract Map

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2.9 Intended Uses of this Draft EIR

This Draft EIR will be used by LAWA staff, BOAC, and the Los Angeles City Planning Commission and City Council to evaluate and consider the environmental impacts of the Landside Access Modernization Program before taking action on the Project. Certification of this Project EIR would complete the CEQA review for facilities in the LAX Landside Access Modernization Program as described in this EIR, other than potential future related development. This Draft EIR also evaluates, at a programmatic level, the potential environmental impacts of future related development after completion of the LAX Landside Access Modernization Program on parcels adjacent to the proposed ground transportation facilities. At such time as individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary.

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; 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. 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 is provided below.

2.9.1 FEDERAL ACTIONS

- FAA 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.
- An FAA determination under 49 U.S.C. 44502(b) that the proposed action is reasonably necessary for use in air commerce or in the interest of national defense.
- FAA determinations under 49 U.S.C. §§ 47106 and 47107 relating to the potential eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP) and/or under 49 U.S.C. § 40117, as implemented by 14 CFR § 158.25, to impose and use passenger facility charges (PFCs) collected at LAX for the proposed Project to assist with construction of potentially eligible development items shown on the ALP.
- FAA approval of a construction safety and phasing plan to maintain aviation and airfield safety during construction pursuant to FAA Advisory Circular 150-5370-2F, *Operational Safety on Airports During Construction*, under 14 CFR 139 (49 U.S.C. 44706).

- FAA approval of changes to the Airport Certification Manual pursuant to 14 CFR 139 (49 U.S.C. 44706).
- FAA certification of conformity of the proposed federal actions with the State Implementation Plan (SIP) per the requirements of the Clean Air Act, as amended (40 CFR Part 93) for components of the LAX Landside Access Modernization Program.
- Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) certification of conformity of the proposed federal actions with the SIP per the requirements of the Clean Air Act, as amended (40 CFR Part 93) for highway components of the LAX Landside Access Modernization Program.
- Approvals for federal financing plans or districts, if applicable.

2.9.2 STATE AND REGIONAL ACTIONS

- Caltrans review and approval for I-105/I-405 improvements, Sepulveda Boulevard improvements, and crossing of Sepulveda Boulevard by the proposed APM.
- Caltrans review and approval of an Airport Permit, required by California Public Utilities Code Section 21661.6(a), for any expansion of an existing airport.
- California State Historic Preservation Officer (SHPO) will participate in the National Historic Preservation Act Section 106 consultation process concerning historical resources at or near the Project site.
- South Coast Air Quality Management District and Southern California Association of Governments (SCAG) review for proposed Project conformity with the SIP.
- South Coast Air Quality Management District authorities to construct and permits to operate.
- The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) administer regulations regarding water quality in the State. Permits or approvals required from the SWRCB and/or RWQCB may include but are not be limited to: (1) General Construction Stormwater Permit; (2) Standard Urban Stormwater Mitigation Plan; (3) Industrial Stormwater General permit; and (4) Submittal of a Recycled Water Report to the RWQCB for the use of recycled water as a dust control measure for construction.
- California Public Utilities Commission review and approval of a System Safety Program Plan and Security Plan for the proposed APM. Also grade crossings even though the proposed APM would be grade-separated.
- Approvals for state financing plans or districts, if applicable.

2.9.3 LOCAL ACTIONS

- BOAC certification of the Final EIR for the LAX Landside Access Modernization Program; adoption of appropriate CEQA findings, a statement of overriding considerations, and a mitigation monitoring and reporting program.
- City Planning Commission and City Council approval of the proposed updates/amendments to the City of Los Angeles General Plan Land Use Element (LAX Plan and Westchester-Playa del Rey Community Plan), Transportation Element (Mobility Plan 2035), and the LAX Specific Plan.

- City Council LAX Plan Compliance determinations pursuant to LAX Specific Plan Section 7.
- Bureau of Sanitation, Watershed Protection Division approval of a Project-specific Stormwater Management Plan or Standard Urban Stormwater Mitigation Plan.
- Los Angeles Fire Department approval.
- County of Los Angeles Airport Land Use Commission review to determine whether the Project is consistent with the County's Airport Land Use Plan.
- Grading permits, building permits, and other permits issued by LADBS for the project and any associated Department of Public Works permits for infrastructure improvements.
- Permit application clearance from the Los Angeles Department of Cultural Affairs.
- Tract/parcel map and zone change approvals from the Department of City Planning, Bureau of Engineering and City Council.
- Approvals for federal, state, or local financing plans or districts, if applicable.
- Other local approvals, permits, or actions that may be deemed necessary for the project.

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3. Overview of Project Setting

3.1 Introduction

This chapter provides an overview of the existing land use, environmental, and development setting associated with the proposed Project. More detailed descriptions of the existing setting in the Project vicinity related to specific environmental issues are provided in each section of Chapter 4, *Environmental Impact Analysis*. In addition to providing an overview of the existing physical setting at and around the Project site, this chapter describes other development projects proposed at Los Angeles International Airport (LAX) and in the nearby area that may, in conjunction with the proposed Project, result in cumulative impacts to the environment.

The Project site is located within and adjacent to LAX property, which is located within the City of Los Angeles. LAX is situated at the western edge of the City of Los Angeles, and is bounded on the north by the City of Los Angeles communities of Westchester and Playa del Rey; on the south by the City of El Segundo; on the southeast by the unincorporated community of Del Aire and the City of Hawthorne; and on the east by the City of Inglewood and the unincorporated community of Lennox. (refer to Figure 2-1). The Los Angeles/El Segundo Dunes, Vista del Mar, Dockweiler State Beach, and the Santa Monica Bay (Pacific Ocean) are located to the west of the Airport. All of the cities and communities in the vicinity of the Project site are located within Los Angeles County.

The Project site occupies approximately 860 acres and is split into three general regions: Central Terminal Area, East of the Central Terminal Area, and Aviation Boulevard/Imperial Highway Area (refer to Figure 2-2). The Central Terminal Area (CTA) includes areas west of Sepulveda Boulevard, focused around World Way and the passenger terminals at LAX. East of the Central Terminal Area is generally bounded by W. Century Boulevard on the south, Interstate 405 (I-405) on the east, W. Arbor Vitae Street/LAX property boundary on the north, and Sepulveda Boulevard on the west. The Aviation Boulevard/Imperial Highway Area is bounded by Imperial Highway on the south, W. 111th Street on the north, Aviation Boulevard on the west, and Hindry Avenue on the east. The Project site comprises various airport, regional commercial, general commercial, and medium-density residential land uses. The Project site is primarily developed and heavily urbanized, with some vacant areas associated with the Belford and Manchester Square Areas.

3.2 Land Use Setting

The Project vicinity includes a diverse mix of low-intensity and medium-intensity commercial, residential, and industrial development (refer to Figure 4.8-10). Immediately to the north of the Project site are parking, commercial, and light industrial areas; single- and multi-family residences in the community of Westchester and Inglewood are located farther to the north. Directly to the south are the LAX south airfield and airport support uses. Existing uses in the CTA include passenger terminals, parking garages, surface parking lots, LAWA administrative offices, Federal Aviation Administration (FAA) facilities, utilities, and roadways. Existing uses in the East of the Central Terminal Area include parking garages, surface parking lots, rental car facilities, hotels, former residential areas, and industrial and commercial uses. This area is home to the Gateway to L.A. Business Improvement District, which includes more than 40 properties adjacent to LAX and approximately 12.3 million square feet of office, parking, retail, restaurant space, and hotels.

Land use designations and development regulations applicable to LAX, including the Project site, are set forth in the LAX Plan[1] and the LAX Specific Plan.[2] The proposed facilities associated with the Project are consistent with the goals and policies of both the LAX Plan and Specific Plan, as discussed further below. Additionally, the proposed Project would be consistent with the policy framework of the Southern California Association of Governments (SCAG) *2016-2040 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS)*.[3] The 2016-2040 RTP/SCS includes the following goals: (1) align plan investments and policies with improving regional economic development and competitiveness; (2) encourage and create incentives for energy efficiency; and (3) maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies. To reduce the impact of passenger trips on ground transportation congestion, one of the strategies in the 2016-2040 RTP/SCS includes supporting on-going local planning efforts and the development of transit access to airports.

The 2016-2040 RTP/SCS identifies the Automated People Mover (APM), Intermodal Transportation Facilities (ITFs), and Consolidated Rental Car Facility (CONRAC) at LAX as ground access improvement projects to be initiated and/or completed by 2040. These projects support the 2016-2040 RTP/SCS initiative to improve airport access. Proposed Project consistency with other applicable local and regional plans is discussed in the relevant sections of Chapter 4, *Environmental Impact Analysis*.

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1 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

2 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

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.

- LAX Plan Consistency: The majority of the Project site is in an area designated in the LAX Plan as "Airport Landside," with small portions designated as "Airport Airside" and the "Belford Special Study Area." The proposed parking facilities and CONRAC facility would be consistent with the corresponding Airport Landside land use designation. The Airport Landside area functions as the interface between Airport Airside and the regional ground transportation network, establishing access portals for the efficient processing of people and goods. As stated in the existing LAX Plan, uses in this area may include systems and facilities such as the CTA, Ground Transportation Center (GTC), ITFs, CONRAC, APM, and airport parking. Examples of uses within these areas include passenger handling services, airport administrative offices, parking areas, cargo facilities, and other ancillary airport facilities. The proposed Project would be consistent with the goals and corresponding policies of the current LAX Plan and is consistent with the proposed updates to the LAX Plan which includes the proposed Project to ensure consistency (see Section 2.8 of Chapter 2, *Description of the Proposed Project*).
- LAX Specific Plan Consistency: Facilities associated with the proposed Project are consistent with the corresponding LAX Specific Plan designations LAX-A Zone: Airport Airside Sub-Area and LAX-L Zone: Airport Landside Sub-Area. Permitted uses in Airport Airside Sub-Area include, but are not limited to airline clubs, retail use, and restaurants; surface and structured parking lots; aircraft under power; airline maintenance and support; air cargo facilities; commercial passenger vehicle staging and holding area; helicopter operations; navigational aids; runways, taxiways, aircraft parking aprons, and service roads; passenger handling facilities; and other ancillary airport facilities. Permitted uses in Airport Landside Sub-Area include, but are not limited to: airline clubs, retail use, and restaurants; rental car operations; surface and structured parking lots; airline maintenance and support; air cargo facilities; commercial passenger vehicle staging and holding area; helicopter operations; navigational aids; passenger handling facilities; service roads; and APM systems, its stations, and related facilities. The LAX Specific Plan would be amended to include the proposed Project to ensure consistency (see Section 2.8 of Chapter 2, *Description of the Proposed Project*).

3.3 Environmental Setting

This section provides an overview of the environmental setting at and near the Project site as it existed at the time the Notice of Preparation (NOP) was published (February 5, 2015), noting the environmental issues most relevant to the Project site. Additional information regarding the environmental setting is provided in the discussion of each resource area in Chapter 4, *Environmental Impact Analysis*.

3.3.1 AESTHETICS

As noted above, the Project site is located at the east end of and adjacent to LAX, in a highly developed, urbanized area consisting of airport, commercial, transportation, and industrial uses. The most notable features on or near the Airport property include the Los Angeles/El Segundo Dunes, the Pacific Ocean; the arched Theme Building and the thematic Airport Traffic Control Tower in the CTA; and the landscaped parkways, medians, illuminated pylons, and "LAX" and other commercial signs along the Sepulveda Boulevard and Century Boulevard approaches to the Airport (see Figure 2-2 and Appendix E). The Project site is not considered a scenic resource and is not near any designated scenic corridors. Section 4.1 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on aesthetics.

3.3.2 AIR QUALITY

The Airport is located within the South Coast Air 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 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). At the State level, the Basin is designated as nonattainment for O_3, particulate matter (PM_{10}), and $PM_{2.5}$.

The existing air quality setting at the Project site is dominated by air pollutants from aircraft activities, vehicles on Airport roads and surrounding roads and highways, including over 1,000,000 trips annually by rental car shuttles operating at LAX, and industrial uses. Other sources of existing air pollutant emissions on the Airport include the Central Utility Plant (CUP), power generators, ground support equipment (GSE), and operations and maintenance activities. Section 4.2 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential air quality effects of the proposed Project.

3.3.3 BIOLOGICAL RESOURCES

The Project site is located in a highly urbanized area in and around LAX. With the exception of a few undeveloped parcels along West 96th Street, and the vacant areas within the Belford and Manchester Square areas, both of which support nonnative ruderal and ornamental vegetation with extremely low habitat value to wildlife, the Project site is almost entirely developed with airport-related or urban uses.

A tree survey conducted by Carlberg Associates[4] identified 323 nonnative, ornamental street trees within public right-of-ways, along the proposed APM alignment, on the construction staging areas, and on other portions of the Project site that would be impacted by development of the proposed Project. These trees consisted of 27 individual species, all of which are nonnative and commonly used in ornamental landscaping consisting primarily of southern magnolia, weeping bottlebrush, Mexican fan palm, callery pear, king palm, and bush cherry trees. None of these trees meet the criteria for being a locally-protected tree, such as native oak, sycamore, or California walnut, under the City of Los Angeles Protected Tree Ordinance (Chapter IV, Article 6 of the Los Angeles Municipal Code). Section 4.3 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on biological resources.

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4 Carlberg Associates, *Inventory of City of Los Angeles Trees, Los Angeles World Airports Landside Transportation Program, Los Angeles, California*, January 20, 2015.

3.3.4 CULTURAL RESOURCES

The findings of the historical resources surveys of LAWA-owned property and adjacent areas conducted as part of this EIR (provided as **Appendix H** of this EIR) indicate that the following structures located in the vicinity of the Project site are potentially significant historical resources.

3.3.4.1 Resources Located on LAWA Property

- Theme Building, located within the CTA in the center of the LAX terminals
- 1961 Airport Traffic Control Tower situated at the eastern end of the CTA
- Terminal 6 Sign Tower, located in front of Terminal 6
- Intermediate Terminal Facilities, located at 6000-6016, 6020-6024, and 6040 Avion Drive
- Quonset Hut, located at 6030 Avion Drive
- Regional Post Office Facility, located at 5800 West Century Boulevard

3.3.4.2 Resources Located on Private Property

- Airport Century Building, located at 9841 Airport Boulevard
- Tishman Airport Center Building, located at 5959 West Century Boulevard
- McCulloch Building, located at 6151 West Century Boulevard
- Union Savings and Loan Building, located at 9800 South Sepulveda Boulevard
- Air Raid Siren, located on the south side of West 98th Street just east of Airport Boulevard
- Airport Marriott Hotel, located at 5855 West Century Boulevard
- Aircraft School Property, located at 9700 South Sepulveda Boulevard

No known archaeological sites are located within the boundaries of the Project site or in the immediate vicinity. Section 4.4 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on cultural resources.

3.3.5 GREENHOUSE GAS EMISSIONS

The primary greenhouse gas emission sources at LAX 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. Section 4.5 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project related to greenhouse gas emissions.

3.3.6 HAZARDS AND HAZARDOUS MATERIALS

As further discussed in Section 4.6, *Hazards and Hazardous Materials*, of Chapter 4, *Environmental Impact Analysis*, there are a number of existing known contamination/remediation sites within and adjacent to LAX.

Sources of historical contamination include aircraft maintenance and fueling activities, underground storage of fuel and other substances, and industrial activities. Additionally, demolition of structures built prior to 1980 may result in the exposure of the public and/or environment to asbestos-containing material (ACM) and/or lead-based paint (LBP).

3.3.7 HYDROLOGY, WATER QUALITY, AND GROUNDWATER

Several drainage watersheds are located at and around LAX; however, the Project area is mostly located within the North Dominquez Channel watershed (see Figure 4.7-1). While a small portion of the Project area extends to the Argo and Imperial watersheds, construction of Project elements in these areas would not materially change hydrology/water quality. Similarly, many of the proposed Project components would be constructed in areas that are currently developed and paved, with the exception of the formerly residential areas within Manchester Square.

Surface water from LAX drains into storm drain facilities within the jurisdiction of the County of Los Angeles and the City of Los Angeles, which discharge to either San Pedro Bay via the Dominguez Channel, or to the Santa Monica Bay. The Project site is located within the West Coast Groundwater Basin. Groundwater beneath LAX is not used for municipal or agricultural purposes. Due to its largely impervious nature, the Project site provides a negligible amount of recharge to the regional groundwater basin. Existing surface water pollutants typically include total suspended solids, oil and grease, metals, and fuel hydrocarbons. No 100-year floodplain areas are located within the Project site. Section 4.7 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on hydrology and water quality.

3.3.8 NOISE

The Project site is located within a developed, urbanized area consisting of airport, commercial, transportation, and residential land uses. The existing noise setting at the Project site is dominated by aircraft activities that occur throughout the day and evening, primarily involving commercial jets. These activities generate noise from aircraft arriving and departing on the north and south runway complexes, and to a lesser degree, aircraft movements on taxiways and aircraft undergoing maintenance activities. Traffic noise from vehicles on-airport and on off-site area roadways and highways, as well as ongoing construction activities at LAX, also contribute to the existing noise setting at and around the Project site. Section 4.9 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential noise and vibration effects of the proposed Project.

3.3.9 POPULATION AND HOUSING

Since 2000, LAWA has implemented an existing relocation program to mitigate aircraft noise impacts on area residences, as part of LAWA's Aircraft Noise Mitigation Program (ANMP).[5] A total of over 2,500 houses and

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5 City of Los Angeles, Los Angeles World Airports, *Final LAX Los Angeles World Airports Relocation Plan Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford*, adopted by the Board of Airport Commissioners, June 2000.

apartments in Manchester Square, the future location of the ITF East and the CONRAC facility, and the Belford residential area, the future location of the APM Maintenance and Storage Facility, have been or are planned to be acquired and the residents relocated under the existing ANMP. No additional residential acquisition is planned for the proposed Project.

As of June 28, 2016, the Belford area contains one multi-family residential structure at the corner of Belford Avenue and W. 96th Street; the Manchester Square area contains 6 single-family residential structures and 31 multi-family residential units. Using 2010 U.S. Census records[6] and the City of Los Angeles Geographic Information System data[7], it has been estimated that approximately 527 residents remain in Manchester Square. Section 4.10 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on population and housing.

3.3.10 PUBLIC SERVICES

Four Los Angeles Fire Department (LAFD) Fire Stations (80, 51, 5, and 95) are located on Airport property and have direct responsibility for fire protection and emergency services within the Airport boundaries (see Figure 4.11.1-1). Fire Station 80 only responds to incidents at LAX, Fire Stations 5 and 95 serve portions of the neighboring communities as well as LAX, and Fire Station 51 serves Dockweiler State Beach in addition to a majority of LAX. Additional resources may be mobilized as needed from Fire Station 67, located near Loyola Marymount University.

With respect to law enforcement, Los Angeles World Airports Police Division (LAWAPD) is supplemented by Los Angeles Police Department resources at LAX. In addition, a number of federal law enforcement and safety agencies have law enforcement responsibilities at LAX. The Transportation Security Administration (TSA) administers an extensive passenger and cargo security program and maintains an armed presence at the Federal Inspection Services areas in each of the five terminals that accommodate international service to screen international passengers for immigration, customs, agricultural protection, and counterterrorism purposes. Further, the U.S. Federal Bureau of Investigation, Customs and Border Protection, Immigration and Customs Enforcement, Drug Enforcement Administration, and U.S. Coast Guard, all have law enforcement responsibilities and personnel at LAX. Section 4.11 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on public services.

3.3.11 TRANSPORTATION/TRAFFIC

The 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. The on-airport roadway system consists of a two-level roadway; the upper level is dedicated to departing passenger

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6 U.S. Department of Commerce, U.S. Census Bureau, 2010 Decennial Census Data, Available: http://factfinder.census.gov/, accessed February 24, 2016.

7 City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

activities, and the lower level is primarily dedicated to arriving passenger activities. The CTA roadway network provides access to the Airport terminals, as well as the CTA public parking garages, which are intended to accommodate short-term and daily parking customers.

The existing street system within the Study Area consists of a regional highway system including major arterials and a local street system including secondary arterials, collectors and local streets. The San Diego (I-405) Freeway, the Glenn Anderson (I-105) Freeway, and the Marina (SR-90) Freeway provide regional access to the Project site. Brief descriptions of these roadway facilities, including number of lanes, speed limits, parking availability, and functional classes per the City of Los Angeles Mobility Plan 2035, are provided in Section 4.12, *Transportation/Traffic,* of Chapter 4, *Environmental Impact Analysis*. Traffic levels and operating conditions on- and off-airport vary throughout the day, week and time of year, ranging from Level-of-Service A (good) to Level-of-Service F (poor).

3.3.12 UTILITIES AND SERVICE SYSTEMS

The City of Los Angeles Department of Water and Power (LADWP) provides water services to most areas in the City of Los Angeles, including LAX. LAX is served by a trunk line in Sepulveda Boulevard that distributes water to transmission lines running along the Airport perimeter. LAX also uses reclaimed water from the West Basin Municipal Water District's (WBMWD) Edward C. Little Water Recycling Facility and has implemented other measures to decrease potable water use at the Airport. Sanitary wastewater generated by activities at LAX is treated at the Hyperion Treatment Plant (HTP), a City-owned treatment plant located adjacent to the southwest boundary of LAX, approximately two miles southwest of the CTA. Electric power at LAX is supplied by LADWP. LAWA participates in LADWP's "Green Power for LA" program to purchase electricity from renewable resources and incorporates energy efficiency and conservation into existing buildings and new construction. In addition to obtaining electricity from LADWP, LAWA operates the CUP, which provides heating and air conditioning to the CTA. The CUP was recently upgraded to a more modern facility with higher capacity and greater efficiency, including a co-generation system that generates electrical power. In addition, LAWA has had a comprehensive, facility-wide recycling program to reduce solid waste generation and disposal at LAX since 1992. This program includes collection of recyclable materials generated by LAWA and within airport terminals and airfield areas; collection of materials from airlines and tenants; independent airline and tenant recycling programs; and source reduction through purchase of recycled products and reuse of materials. Solid waste that cannot be recycled is transferred to the Sunshine Canyon Landfill in Sylmar for disposal. Section 4.13 of Chapter 4, *Environmental Impact Analysis*, provides details and analysis of potential effects of the proposed Project on utilities and service systems.

3.4 Development Setting

This section identifies past, present, and reasonably foreseeable probable future projects, including both LAX and non-LAX development projects, that could, in conjunction with the proposed Project, result in cumulative impacts to the environment. Cumulative impacts of the proposed Project and other development projects within the vicinity of LAX will be discussed further within each environmental resource section in Chapter 4, *Environmental Impact Analysis,* of the EIR.

Table 3-1 lists past, present, and reasonably foreseeable probable future projects at/adjacent to LAX within the immediate area of the proposed Project; the locations of these projects are identified on **Figure 3-1**. Probable development projects in the City of Los Angeles and neighboring communities within the vicinity of the traffic study area for the proposed Project 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.

Table 3-1 (1 of 4): 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 (Delta Air Lines) and Terminals 6-8 (United Airlines).
4	LAX Bradley West Project	Nov 2013 – Nov 2017	Replacement of existing concourses and aprons at the Tom Bradley International Terminal (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 (Terminal 3 Connector), 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 (Southwest Airlines).

Table 3-1 (2 of 4): Development Projects At/Adjacent to LAX

	PROJECT	DATES	DESCRIPTION
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 will be 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.
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.
9	Metro Crenshaw/LAX Transit Corridor and Stations	Jan 2015 – 2024	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. Two stations are being constructed in proximity to LAX, one near the intersection of Century Boulevard and Aviation Boulevard, and another proposed station at 96th Street and Aviation Boulevard, the Airport Metro Connector.
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 APM 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 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.

Table 3-1 (3 of 4): Development Projects At/Adjacent to LAX

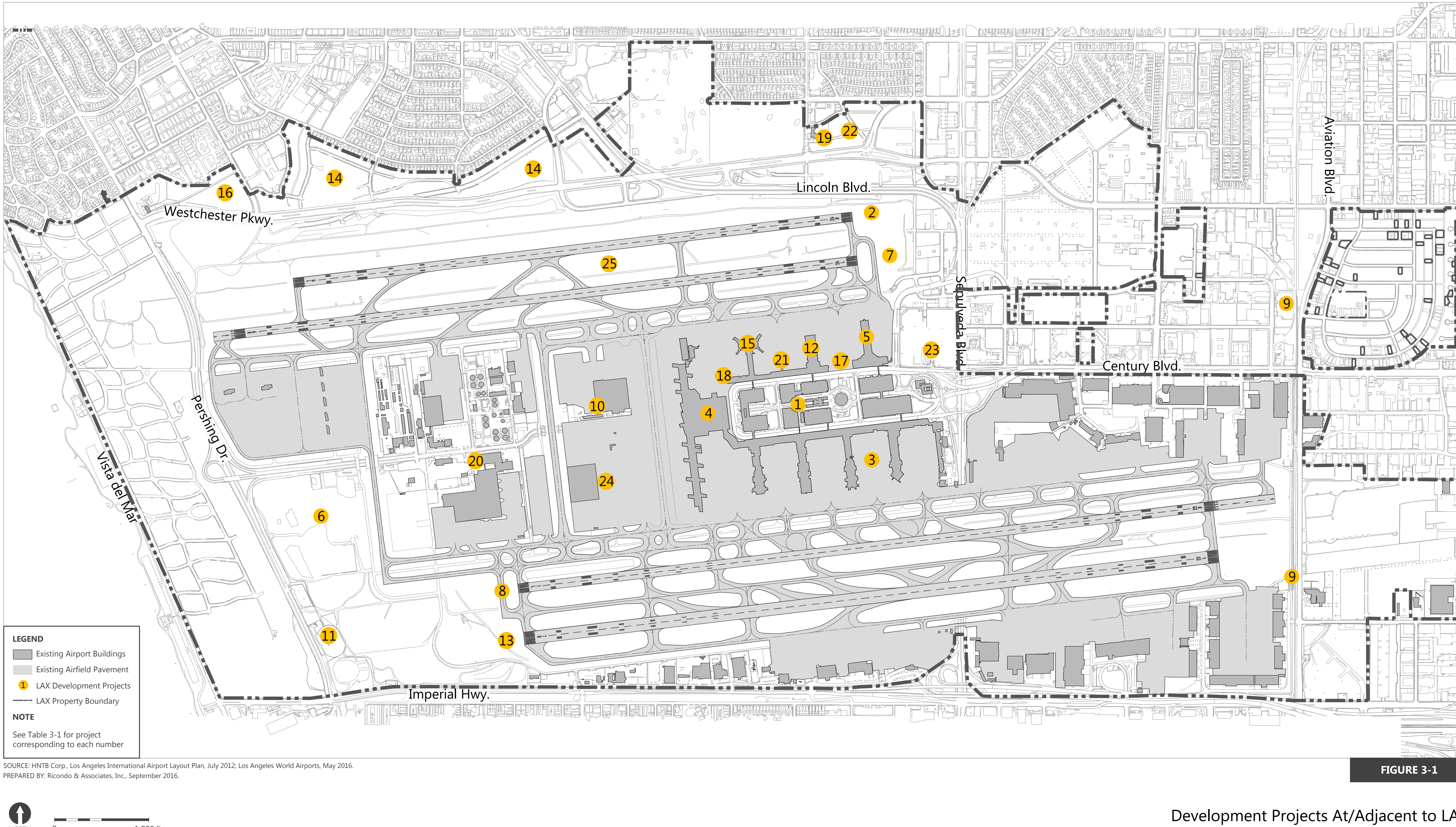
	PROJECT	DATES	DESCRIPTION
N/A	Miscellaneous Projects and Improvements	Jan 2014 – July 2020	LAWA will undertake a wide variety of smaller miscellaneous projects and improvements mostly related to repair/replacement of, and upgrades to, existing facilities at LAX, including, but not limited to, runway 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.
		Probable Future Projects	
12	Terminal 2 Improvements	Jan 2014 – Jan 2018	Major interior improvements and building system upgrades to Terminal 2.
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.
15	Terminal 3 Improvements	Nov 2015 – Nov 2016	Minor interior improvements to implement regulatory upgrades in Terminal 3.
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 improve passenger services 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	March 2018 – March 2019	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 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.

Table 3-1 (4 of 4): Development Projects At/Adjacent to LAX

	PROJECT	DATES	DESCRIPTION
21	Terminals 2 and 3 Modernization Project	April 2017 – Sep 2023	Improvements to Terminals 2 and 3, consisting of upgrading the Terminal 2 concourse, including construction of additional floor area; the demolition and reconstruction of the Terminal 3 concourse building to provide additional concourse area, including a new operation control center; the demolition of the southern appendages of the Terminal 3 satellite; the demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings) at Terminals 2 and 3, including new facilities for passenger and baggage screening, ticketing, and baggage claim; and a secure connector between Terminals 2 and 3.
22	Airport Security Buildings	Jan 2019 – Jan 2021	Relocation of LAWA Police Department building to LAX Northside, which may 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.
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
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 draft EA for the proposed SoCal Metroplex project in 2015.

SOURCES: LAWA, 2016; Los Angeles County Metropolitan Transportation Authority (Metro), *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, Executive Summary and Chapter 2, Project Description, June 2016.

PREPARED BY: Ricondo & Associates, Inc., July 2016.



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; Los Angeles World Airports, May 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 3-1

Development Projects At/Adjacent to LAX

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Table 3-2 (1 of 13): 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 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.

Table 3-2 (2 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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.).

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Table 3-2 (3 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.

Table 3-2 (4 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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 restaurant	11960 W. Washington Blvd.	98-unit apartment, 11,250 sq. ft. specialty retail, and 3,750 sq. ft. quality 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).

Table 3-2 (5 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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.

Table 3-2 (6 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.

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Table 3-2 (7 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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).
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.

Table 3-2 (8 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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.

Table 3-2 (9 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.

Table 3-2 (10 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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.

Table 3-2 (11 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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.

[Draft]

Table 3-2 (12 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.

Table 3-2 (13 of 13): LAX Area Probable Development Projects

	PROJECT	ADDRESS	PROJECT DESCRIPTION
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.
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: Ricondo & Associates, Inc., February 2016.

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4. Environmental Impact Analysis

Introduction

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

The following topics are addressed in this chapter:

- Aesthetics
- Air Quality and Human Health Risk
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards
  - Hazardous Materials
  - Safety Hazards
- Hydrology, Water Quality, and Groundwater
- Land Use and Planning
- Noise
  - Road Traffic Noise
  - Construction Traffic and Equipment Noise and Vibration
  - Transit Noise and Vibration
- Population and Housing
- Public Services
  - Fire Protection
  - Law Enforcement
  - Schools

- Transportation/Traffic
  - On-Airport Transportation
  - Off-Airport Transportation
  - Construction Surface Transportation
- Utilities and Service Systems
  - Energy
  - Water

Organization

Each of the 13 main environmental disciplines addressed in this chapter is discussed in a separate section using a common organization. Sections are numbered 4.1 through 4.13. 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 the proposed Project 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 LAX Landside Access Modernization Program Notice of Preparation/Initial Study (February 2015), which is 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 issue 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 **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 section 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 measures used to determine whether a significant environmental impact would occur as a result of the Project. This section 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 proposed Project impacts reflect guidance provided in Appendix G of the State CEQA Guidelines[1] and/or criteria or guidance included in the *L.A. CEQA Thresholds Guide*.[2]

- The **Impacts Analysis** section presents the analysis of impacts at a project-level for the buildout horizon years of 2024 for Phase 1 and 2035 for Phase 2. Impacts for the potential future related development described in Section 2.7 of Chapter 2, *Description of the Proposed Project*, were analyzed at a programmatic-level for the horizon year of 2035. 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 section 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 section identifies any significant impacts that cannot be mitigated to a level that is less than significant. These "significant unavoidable impacts" are also listed in Section 6.1, *Significant Unavoidable Impacts*, 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 section also includes other measures, such as enhanced sustainability measures, proposed by LAWA to reduce impacts. This heading/subsection is only included in cases where there is a Standard Control Measure or other measures 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.

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

2 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Analytical Framework

PROGRAM LEVEL VS. PROJECT LEVEL ENVIRONMENTAL ENTITLEMENTS AND ANALYSIS

As described in Chapter 2, *Description of the Proposed Project*, the LAX Landside Access Modernization Program project is intended to support the ongoing modernization of LAX by improving the landside transportation system serving the Airport and improving the passenger and visitor experience. The LAX Landside Access Modernization Program would be completed in two phases consisting of the construction of all Project components, including: the Automated People Mover (APM) and associated facilities, both Intermodal Transportation Facilities (ITFs), the Consolidated Rental Car Facility (CONRAC), and a series of roadway improvements. This Draft EIR analyzes these Project components at a “project level” of detail.

The LAX Landside Access Modernization Program also includes potential future related development of parcels that would be utilized for construction laydown and staging areas during construction of the proposed Project, but for which LAWA has no specific plans after that time. While there are no specific plans for development of these parcels at this time, it is anticipated that the development of these parcels could accommodate up to 900,000 square feet of commercial development. The Draft EIR analyzes this potential future development at a “program level.”

As discussed under Section 15146(b) of the State CEQA Guidelines, an EIR prepared for program level entitlements, "need not be as detailed as an EIR on the specific construction projects that might follow." The State CEQA Guidelines incorporate the "rule of reason" and advise public agencies to avoid "speculative analysis of environmental consequences for future and unspecified development" that has not yet been formulated at greater levels of detail. (Discussion following CEQA Guidelines Section 15146.) Analyzing the impacts of potential future related development at a programmatic level of detail allows a lead agency to "consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts." (State CEQA Guidelines Section 15168(b)(4).) If and when future development is proposed within these parcels, those proposals will be evaluated as appropriate in compliance with CEQA.

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 Notice of Preparation (NOP) for this EIR was published on February 5, 2015. In accordance with the provisions of CEQA, 2015 is the baseline year for characterizing existing conditions in the environmental analysis. Where existing conditions data specific to 2015 were not available or where 2015, 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.

For certain analyses, a full year's worth of data was considered necessary and appropriate to characterize existing baseline conditions. Such is the case relative to existing air pollutant emissions and existing Airport traffic generation, whereby the variability in Airport operations throughout the year, especially seasonal variations, results in "existing" conditions for those topics being very different depending on time of year. For these analyses, data for the prior calendar year, which in the case of this EIR is 2014, were used to define existing baseline conditions for these topics.

For most resource categories, using existing conditions to measure the "significance" of impacts of the proposed Project does not provide the most realistic or meaningful assessment of project impacts, especially given that full buildout of the proposed Project is not anticipated to occur until 2035. Between now and the completion of the proposed Project, the baseline conditions will be substantially influenced by, and change because of, local and regional growth that is projected to occur irrespective of the proposed Project. On a local level, existing operations-related conditions at LAX will change over time based on the growth in passenger activity levels that are projected to increase from 74.9 million annual passengers (MAP) in 2015 (i.e., the calendar year used to define existing baseline operations) to 85 MAP by 2024 and 96 MAP by 2035. The projected increase in passenger activity at LAX in future horizon years is consistent with current Federal Aviation Administration (FAA) growth forecasts.[3] The future passenger activity levels at LAX are also consistent with the adopted Southern California Association of Governments 2016-2040 Regional Transportation Plan.[4] The future growth in passenger activity level at LAX is projected to occur regardless of the proposed Project.

DESCRIPTION OF CUMULATIVE IMPACTS

As defined in CEQA Guidelines Section 15355, cumulative impacts are the impacts of the 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 and operation of the proposed Project in conjunction with other planned projects both on and off LAX property. As documented in Chapter 3, *Overview of Project Setting*, construction and operation of several LAX development projects and non-LAX development projects could occur simultaneously with the proposed Project. These projects are described in Section 3.4 of this EIR and an analysis of cumulative impacts is included within the analysis of each resource area.

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3 Federal Aviation Administration, *APO Terminal Area Forecast 2014*, January 2015.

4 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.

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 program to the maximum extent feasible and has established some of the most aggressive construction emissions reduction measures in southern California, 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. Another example of a LAWA Standard Control Measure is conformance by contractors with LAWA's existing Archaeological Treatment Plan[5] 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 possible, 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 or other measures 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").

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

4.1 Aesthetics

4.1.1 INTRODUCTION

This section evaluates the impacts of the proposed Project on aesthetics and visual character, obstruction of views, nighttime illumination, light and glare, and shading. The evaluation of aesthetics and visual character impacts considers the existing visual character of the Project site and surrounding area, as well as how implementation of the proposed Project would affect this visual character. The evaluation of view impacts considers the existing viewsheds and known visual resources (including scenic highways and landmarks) that may be affected by the development of the Project site. The analysis of light and glare assesses the effects of new sources of nighttime lighting and glare from the reflection of sunlight or artificial light from any reflective surface that would be established on the Project site. This section also evaluates patterns of shading that would be created by the maximum development of the proposed Project and the effect on any surrounding sensitive uses.

Prior to the preparation of this EIR, an Initial Study (included in **Appendix A** of this EIR) was prepared using the California Environmental Quality Act (CEQA) Environmental Checklist Form to assess potential environmental impacts associated with land use and planning. For one of these screening thresholds, the Initial Study found that the proposed Project would result in a "less than significant impact", and thus, no further analysis of this topic in an EIR was required. The following Initial Study screening criteria related to aesthetics does not require any additional analysis in this EIR:

- Potential impacts to scenic vistas were evaluated and determined to have a "Less than Significant Impact" in the Initial Study. The only scenic vista in the vicinity of the Project site is the Pacific Ocean. It is more than 2 miles to the west and not visible from the Project site due to topography, distance, and intervening Airport facilities. Therefore, the impact on scenic vistas from the proposed Project would be less than significant.

4.1.2 METHODOLOGY

4.1.2.1 Visual Character

Impacts on visual character were determined by comparing existing visual conditions at and around LAX with conditions under the proposed Project. The study area for the aesthetics analysis comprises LAX property and areas surrounding LAX potentially affected by implementation of the proposed Project. Existing visual conditions were documented through a survey of the study area conducted between June and March 2016 (see **Appendix E**). These aesthetic conditions represent baseline conditions for the purposes of the impact analysis herein.

The methodology used to assess visual character impacts included how the proposed Project would degrade views across the Project site. This assessment focused on significant views of the Project area along major roadways and on other public viewpoints where substantial visual change would occur with implementation of the proposed Project. Photograph locations of primary public viewpoints, when generally traveling from east to west within the Project study area, are shown on **Figure 4.1-1**.

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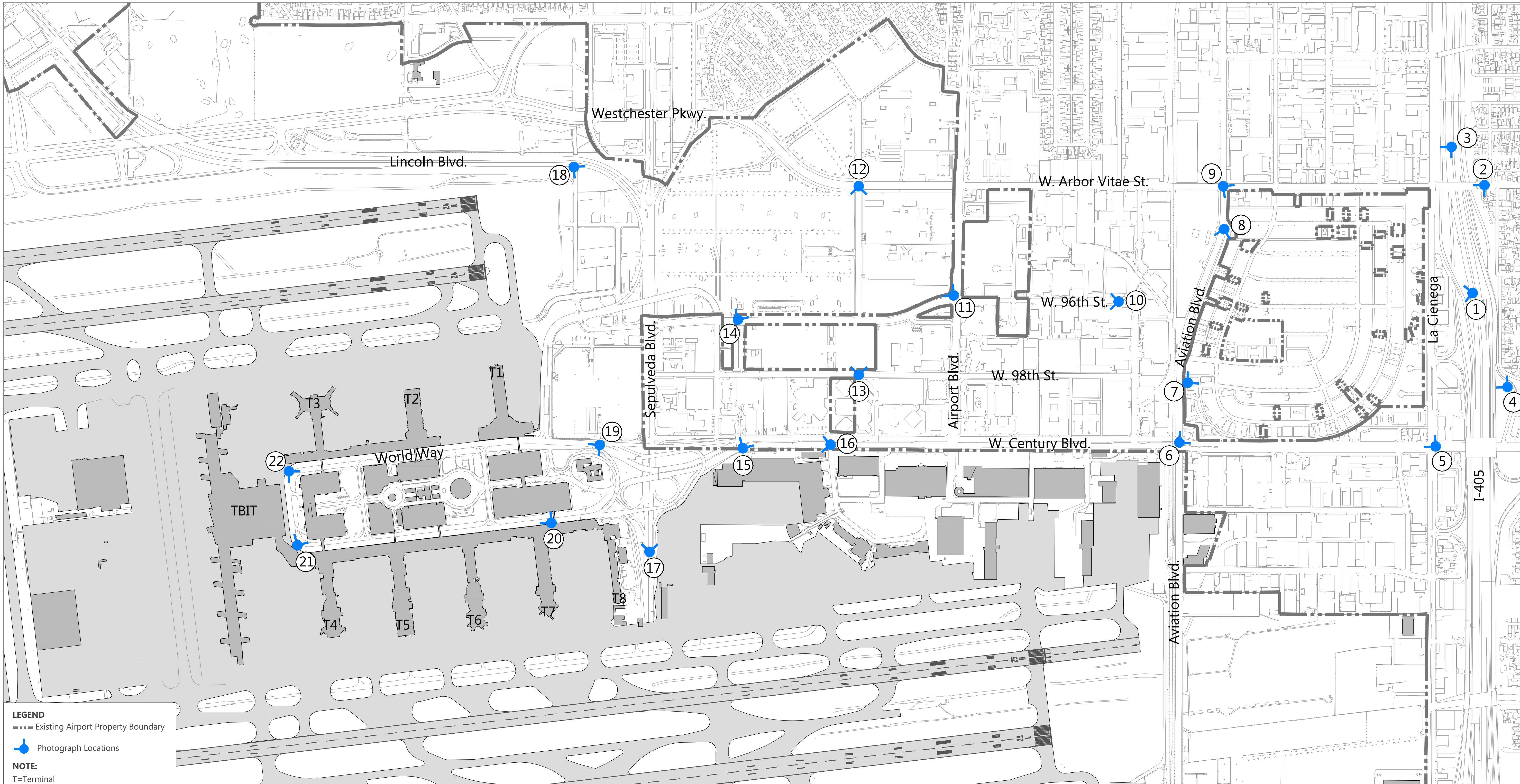

SOURCE: Los Angeles World Airports, August 2014; Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 1,000 ft.

FIGURE 4.1-1

Photograph Locations

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As shown in Figure 4.1-1, primary public viewpoints available to the general public traveling to or near the Airport are located along W. Century Boulevard, W. 98th Street, W. 96th Street, S. Sepulveda Boulevard, Lincoln Boulevard, Airport Boulevard, Aviation Boulevard, and S. La Cienega Boulevard, and World Way within the Central Terminal Area (CTA). The discussion of individual photographs taken along these primary roadways is provided in Section 4.1.3.2.

Establishing the basis for the analysis also involved collecting and reviewing existing plans and guidelines in effect at LAX that address design, architecture, and landscaping. These plans include the LAX Plan,[1] LAX Specific Plan[2] (including newly developed LAX Design Guidelines – see **Appendix B**), LAX Street Frontage and Landscape Development Plan Update,[3] and the LAWA Design and Construction Handbook.[4] Additionally, LAWA has been working with the City of Los Angeles Department of City Planning on the Century Boulevard Streetscape Plan. These plans represent current standards for development at LAX that would be incorporated, where applicable, as minimum standards for the proposed Project.

4.1.2.2 Shading

Shade and shadow impacts may result if direct sunlight to the proposed buildings affects adjacent properties. Per the *L.A. CEQA Thresholds Guide*,[5] "facilities and operations sensitive to the effects of shading include: routinely useable outdoor spaces associated with residential, recreational, or institutional (e.g., schools, convalescent homes) land uses; commercial uses such as pedestrian oriented outdoor spaces or restaurants with outdoor eating areas; nurseries; and existing solar collectors." These land uses are termed "shadow-sensitive" because sunlight is important to the function and physical comfort of these land uses.

Based on the *L.A. CEQA Thresholds Guide* identification of shadow-sensitive land uses, the closest shadow-sensitive uses to the Project site include: (1) the residential uses located north of Westchester Parkway/W. Arbor Vitae Street, between S. Sepulveda Boulevard and Bellanca Avenue; and (2) the hotel buildings along W. Century Boulevard and Airport Boulevard, which are considered shadow-sensitive uses because of their outdoor recreational areas for guests (e.g., pools, courtyards, walkways, etc.). A list of these individual shadow-sensitive uses is provided in **Table 4.1-1**.

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1 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

2 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

3 City of Los Angeles, Los Angeles World Airports, Environmental Management Division, *Los Angeles International Airport Street Frontage and Landscape Development Plan Update*, March 2005.

4 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: http://www.lawa.org/uploadedFiles/LAXDev/News_for_LAXDev/Sustainable%20Airport%20PDC%20Guidelines%20Jan08.pdf.

5 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Table 4.1-1: Shadow-Sensitive Uses within Proximity to the Project Site

NO.	SHADOW-SENSITVE USE	APPROXIMATE ADDRESS
1	Concourse Hotel	6225 W Century Blvd, Los Angeles
2	Courtyard LAX/Century Blvd.	6161 W Century Blvd, Los Angeles
3	LAX Sheraton Gateway Hotel	6101 W Century Blvd, Los Angeles
4	Crowne Plaza LAX	5985 W Century Blvd, Los Angeles
5	Embassy Suites	9801 Airport Blvd, Los Angeles
6	LAX Marriott	5855 W Century Blvd, Los Angeles
7	Four Points Sheraton Hotel	9750 Airport Blvd, Los Angeles
8	Renaissance LAX Hotel	9620 Airport Blvd, Los Angeles
9	Super 8 LAX	9250 Airport Blvd, Los Angeles
10	LAX Hilton	5711 W Century Blvd, Los Angeles
11	Travelodge Hotel LAX	5547 W Century Blvd, Los Angeles
12	The Westin LAX	5400 W Century Blvd, Los Angeles
13	La Quinta Inn & Suites LAX	5249 W Century Blvd, Los Angeles
14	Holiday Inn LAX	9901 S La Cienega Blvd
15	Residential Development [1/]	Corner of Ramsgate Ave. and Morley St., Los Angeles

NOTE:

1/ Location based on closest shadow-sensitive uses to the proposed Project components.

SOURCE: Meridian Consultants, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

According to the *L.A. CEQA Thresholds Guide,* the effect of shadows must be evaluated for structures over 60 feet tall and within a distance of three times their height to shadow-sensitive land uses on the north, northeast, or northwest. The analysis of shading impacts was based on the maximum potential height of buildings associated with the proposed Project, the length of the shadow that would be cast by these buildings, and the relation of the shadow to the existing urban environment, including the nearby sensitive uses previously identified in Table 4.1-1. To analyze potential shading effects, shading diagrams were produced to illustrate the shadow patterns associated with the proposed Project. A shadow length is dependent on the height, size, and shape of the building from which shadow is cast and the angle of the sun. The angle of the sun varies with respect to the rotation of the earth and the earth's elliptical orbit. The longest shadows are cast during winter months and the shortest shadows are cast during the summer months. As such, shading diagrams were provided to analyze the two most extreme conditions under which shadows would be produced: the summer solstice and the winter solstice. The summer solstice (June 21) was used to determine impacts between early April and late October, and the winter solstice (December 22) was used to calculate potential impacts between late October and early April. The shade and shadow analysis includes all development proposed under the proposed Project raised to the maximum height of all proposed buildings and the APM guideway, excluding proposed roadway improvements as these are not structures that would cast shadows, or in the case of the ramp improvements, would be overshadowed by the APM guideway. This approach provides a conservative analysis of shading cast by the proposed Project. Structures proposed by the Project would cast an equal or, most likely, lesser shadow than the models predict.

4.1.2.3 Light and Glare

Light and glare also influence the existing visual character of an area. The provision of adequate and appropriate lighting and limiting glare and the potential for glare are fundamental safety requirements in the design of any large facility, especially an airport and its associated roadways. Accordingly, a number of light-and-glare-related regulations apply to airports, and therefore, to the proposed Project. Compliance with the regulatory requirements described in Section 4.1.3.1 below would serve to limit lighting within and near LAX, thus limiting the potential for adverse effects associated with facilities at LAX. The primary focus of this analysis was on light spillover effects. Light spillover effects involve light that shines beyond the area intended for illumination that can be a source of annoyance to adjoining properties, particularly for residences where light (e.g., direct illumination) might disturb sleep or privacy. Glare—both daytime reflection of sunlight off large expanses of reflective surface and unshielded nighttime lighting—can also have adverse effects on land use, including airport operations. Therefore, this section also addresses the potential for the proposed Project to: (1) introduce new light sources that could adversely affect nearby light-sensitive receptors (e.g., residential uses, hotels, and natural areas); and (2) introduce new light or glare sources that could adversely affect day or nighttime views in this area.

4.1.3 EXISTING CONDITIONS

4.1.3.1 Regulatory Setting

4.1.3.1.1 City of Los Angeles Regulations

City of Los Angeles Municipal Code

The City of Los Angeles Municipal Code (LAMC), Section 12.50, Airport Approach Zoning Regulations,[6] establishes special airport zoning regulations for land uses within the approach zones of LAX (specifically within the areas mapped in the Airport Hazards Area Maps referenced in the Code) to prevent the creation or establishment of airport hazards. These zoning regulations are primarily directed toward height limits, but also address light emissions to avoid hazards to aircraft resulting from illuminated signs and structures within airport hazard areas.

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6 Los Angeles Municipal Code, Chapter 1, Article 2 Specific Planning—Zoning, Comprehensive Zoning Plan, Section 12.50, "Airport Approach Zoning Regulations."

LAMC, Section 93.0117,[7] regulates light spillover in residential areas by prohibiting the illuminance of more than two footcandles of lighting intensity or generation of direct glare on (1) any exterior glazed window or sliding glass door on any other property containing a residential unit or units; (2) any elevated habitable porch, deck or balcony on any other property containing a residential unit or units; or (3) any ground surface intended for uses such as recreation, barbecue, or lawn areas on any other property containing a residential unit or units. These regulations would apply to Project-related light sources occurring adjacent to residential development (for example, along the north side of the Consolidated Rental Car Facility (CONRAC)).

City of Los Angeles General Plan

The City of Los Angeles General Plan Framework Element[8] (adopted in 1996) is an element of the City's General Plan. The Framework Element defines the City's long-range comprehensive growth strategy, and sets forth policies, goals, and objectives to guide land use regulations for Community Plans. The City of Los Angeles General Plan Land Use Element consists of 35 local Community Plans and the LAX Plan and the Port of Los Angeles Plan that set forth land use regulations and zoning for specific areas. The LAX Plan is the Community Plan for LAX, which is intended to promote an arrangement of airport uses that encourages and contributes to the modernization of LAX in an orderly and flexible manner within the context of the City and region. It provides goals, objectives, policies, and programs that establish a framework for the development of facilities that promote the movement and processing of passengers and cargo within a safe and secure environment. The Framework Element's Long-Range Land Use Diagram identifies the general vicinity outside of the Airport as an area designated to support community centers. A community center is defined as a focal point for surrounding residential neighborhoods and contains a diversity of uses, such as offices, overnight accommodations, cultural and entertainment facilities, and schools and libraries, in addition to neighborhood-oriented services. Community centers are also defined as areas that are served by small shuttles, local buses, and automobiles, and/or may be located along rail transit stops.

The following policies, of the Framework Element that are applicable to the aesthetic-related impacts of the proposed Project are listed below:

- Policy 3.2.1: Provide a pattern of development consisting of distinct districts, centers, boulevards, and neighborhoods that are differentiated by their functional role, scale, and character. This shall be accomplished by considering factors such as the existing concentrations of use, community-oriented activity centers that currently or potentially service adjacent neighborhoods, and existing or potential public transit corridors and stations.
- Policy 3.2.4: Provide for the siting and design of new development that maintains the prevailing scale and character of the City's stable residential neighborhoods and enhance the character of commercial and industrial districts.

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7 Los Angeles Municipal Code, Chapter 9, Article 3, Electrical Code, Section 93.0117, "Outdoor Lighting Affecting Residential Property."

8 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework, An Element of the City of Los Angeles General Plan,* Originally adopted December 11, 1996, Re-adopted August 8, 2001, Available: http://cityplanning.lacity.org/Cwd/Framwk/contents.htm.

- Policy 3.10.3: Promote the development of high-activity areas in appropriate locations that are designed to induce pedestrian activity, in accordance with Pedestrian-Oriented District Policies 3.16.1 through 3.16.3, and provide adequate transitions with adjacent residential uses at the edges of the centers.
- Policy 3.10.4: Provide for the development of public streetscape improvements, where appropriate.
- Policy 3.10.5: Support the development of small parks incorporating pedestrian-oriented plazas, benches, other streetscape amenities, and where appropriate, landscaped play areas.
- Policy 5.2.2: Encourage the development of centers, districts, and selected corridor/boulevard nodes such that the land uses, scale, and built form allowed and/or encouraged within these areas allow them to function as centers and support transit use, both in daytime and nighttime. Additionally, develop these areas so that they are compatible with surrounding neighborhoods. The built form of regional centers will vary by location. In areas such as Century City, freestanding high-rises that are not pedestrian-oriented characterize portions of these centers. Nevertheless, regional centers should contain pedestrian-oriented areas, and incorporate the pedestrian-oriented design elements defined in Policy 5.8.1.
- Policy 5.8.1: Buildings in pedestrian-oriented districts and centers should have the following general characteristics: (a) an exterior building wall high enough to define the street, create a sense of enclosure, and typically located along the sidewalk; (b) a building wall more-or-less continuous along the street frontage; (c) ground floor building frontage designed to accommodate commercial uses, community facilities, or display cases; (d) shops with entrances directly accessible from the sidewalk and located at frequent intervals; (e) well-lit exteriors fronting on the sidewalk that provide safety and comfort commensurate with the intended nighttime use, when appropriate; (f) ground floor building walls devoted to display windows or display cases; (g) parking located behind the commercial frontage and screened from view and driveways located on side streets where feasible; (h) inclusion of bicycle parking areas and facilities to reduce the need for vehicular use; and (i) the area within 15 feet of the sidewalk may be an arcade that is substantially open to the sidewalk to accommodate outdoor dining or other activities.

Mobility Plan 2035

The Mobility Plan 2035,[9] adopted in 2015, is the new general plan transportation element for the City of Los Angeles. The Mobility Plan 2035 is structured around five main objectives: improved safety; enhanced quality of infrastructure; access for all; collaboration, communication, and choice; and environmental and community health.[10] The Mobility Plan 2035 includes specified pedestrian, bicycle, transit, and vehicle enhancements and design standards throughout the City. Many of the policies relate to roadway design and envision a balanced, multimodal transportation system. The following general aesthetics-related policies from the Mobility Plan 2035 are applicable to the proposed Project:

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9 Los Angeles Department of City Planning, *Mobility Plan 2035, An Element of the General Plan*, adopted January 20, 2016.

10 Los Angeles Department of City Planning, *Mobility Plan 2035, An Element of the General Plan*, adopted January 20, 2016.

- Policy 2.2 – Complete Streets Design Guide: Establish the Complete Streets Design Guide as the City's document to guide the operations and design of streets and other public rights-of-way.
- Policy 2.3 – Pedestrian Infrastructure: Recognize walking as a component of every trip, and ensure high-quality pedestrian access in all site planning and public right-of-way modifications to provide a safe and comfortable walking environment.
- Policy 2.14 – Street Design: Designate a street's functional classification based upon its current dimensions, land use context, and role.
- Policy 2.16 – Scenic Highways: Ensure that future modifications to any scenic highway do not impact the unique identity or characteristic of that scenic highway.
- Policy 3.3 – Land Use Access and Mix: Promote equitable land use decisions that result in fewer vehicle trips by providing greater proximity and access to jobs, destinations, and other neighborhood services.
- Policy 4.14 – Wayfinding: Provide widespread, user-friendly information about mobility options and local destinations, delivered through a variety of channels including traditional signage and digital platforms.
- Policy 5.5 – Green Streets: Maximize opportunities to capture and infiltrate stormwater within the City's public right-of-ways.

As provided for by Policy 2.2 of the Mobility Plan 2035, the Great Streets for Los Angeles: Complete Streets Design Guide lays out a vision for designing safe, accessible, and vibrant streets throughout the City. The Complete Streets Design Guide provides a compilation of design concepts and best practices that promote safety and accessibility and serves as a guiding document to ensure all projects are designed with Complete Streets principles in mind. Various aesthetic-related design concepts outlined in the Complete Streets Design Guide include, but are not limited to, streetscape signage and wayfinding, street trees and landscaping, street lighting, and public art.

Westchester–Playa del Rey Community Plan

The land use policies and standards of the General Plan Framework and the General Plan Elements are implemented at the local level through community plans, which focus on specific geographies within the City. The portion of the Project area that is not LAWA property lies within the Westchester–Playa del Rey Community Plan[11] area, one of 35 community plans that are part of the Land Use Element of the City of Los Angeles General Plan. The community plan recognizes the intertwined relationship between LAX and the Westchester–Playa del Rey community. One of the stated goals of the plan is to coordinate the development of LAX with the surrounding communities.

[11] City of Los Angeles, Department of City Planning, *Westchester–Playa del Rey Community Plan,* adopted April 13, 2004, as amended.

The following policy of the Westchester–Playa del Rey Community Plan is applicable to the aesthetic-related impacts of the proposed Project:

- Encourage attractive and effective buffers such as transitional land use, landscaping, open space, etc. between LAX and the Westchester-Play Del Rey Community.

Additionally, Chapter V, Urban Design of the Westchester–Playa del Rey Community Plan establishes design policies and standards to ensure that residential, commercial, and industrial projects and public spaces and rights-of-way incorporate specific elements of good design. The Urban Design chapter also contains a Community Design and Landscaping section which is directed at the community's use of streetscape improvements and landscaping in public spaces and rights-of-way. The intent of these design policies and standards is to promote a stable and pleasant environment. The emphasis for commercial corridors is on the provision and maintenance of the visual continuity of streetscapes and the creation of an environment that encourages pedestrian and economic activity. The intent for industrial areas is to improve compatibility with the non-industrial areas and encourage quality industrial development.

4.1.3.1.2 Century Boulevard Streetscape Plan

In August 2013, LAWA and the City of Los Angeles initiated a 3-year effort to develop the Century Corridor Streetscape Plan.[12] The Century Corridor Streetscape Plan aims to establish a new unified, distinctive, pedestrian-friendly urban design framework to help guide the implementation of future streetscape improvements along the corridor and throughout the surrounding hotel and office business district. The plan includes provisions for the expansion of sidewalks; introduction of new street trees, street furniture and street lights; improvement of bicycle network connectivity; and creation of new public gathering spaces. A primary goal of the plan is to improve the pedestrian experience along W. Century Boulevard and create an environment where existing and future businesses can thrive, not only enhancing the visual qualities of W. Century Boulevard, but to help transform the district into a significant regional economic asset for the City. Other objectives of the plan include: (1) enhance and redefine the "Gateway to Los Angeles" by creating a sense of place; (2) enrich the pedestrian experience for the surrounding hotel guests and office employees; (3) create a high quality pedestrian environment where existing and future businesses can thrive; and (4) improve the district's pedestrian connectivity to the regional Metro rail system, local hotels and offices, and LAX.

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[12] City of Los Angeles, Los Angeles World Airports, "Century Corridor Streetscape Plan, Project Background," Available: http://www.lawa.org/ourLAX/CurrentProjects.aspx?id=8767, accessed July 2016.

4.1.3.1.3 Airport-Specific Regulations

LAX Plan

The LAX Plan[13] is the community plan for the LAX area and was adopted concurrently with the LAX Master Plan Program, approved by the Los Angeles City Council in December 2004 and amended in 2013. The LAX Plan is part of the Land Use Element of the City of Los Angeles General Plan. The LAX Plan establishes the land use policy for LAX and is intended to promote an arrangement of airport uses that encourages and contributes to the modernization of LAX in an orderly and flexible manner within the context of the City and region.

The goals and objectives of the LAX Plan—developed to advance the LAX Plan vision and guide airport development—that are applicable to the aesthetic-related impacts of the proposed Project are listed below:

- Goal 5: Acknowledge neighborhood context and promote compatibility between LAX and the surrounding neighborhoods.
- Objective 5.01: Minimize negative impacts to surrounding residential land uses.

A number of policies have been developed to implement the LAX Plan goals and objectives to guide airport development that are applicable to the proposed Project. These policies are organized into topics that address functional and operational aspects of the Airport, including safety, security, land use (Airport Airside, Airport Landside, LAX Northside, and open space), conservation (energy/resources and biotic communities), circulation and access, economic benefits, noise, air quality, hazardous waste, and design. Policies pertinent to Project-related aesthetic issues are described below.

<u>Land Use</u>

The Airport Landside area functions as the interface between aircraft operations (Airport Airside) and the regional ground transportation network, establishing access portals for the efficient processing of people and goods. Examples of uses within this area include passenger handling services, Airport administrative offices, parking areas, cargo facilities, and other ancillary airport facilities. Uses in this area specific to the proposed Project include systems and facilities such as the Intermodal Transportation Facilities (ITFs), CONRAC, Automated People Mover (APM), and airport parking. The facilities included as part of the proposed Project are described in Chapter 2, *Description of the Proposed Project*. Development of the Airport Landside subarea is governed by the following policies:

- Policy P1: Ensure that the scale and activity level of airport facilities appropriately relates to any abutting neighborhood edges.

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13 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

- Policy P7: Provide and maintain landscaped buffer areas along the southern boundary of Airport Airside that include setbacks, landscaping, screening, or other appropriate view sensitive uses with the goal of avoiding land use conflicts, shielding lighting, enhancing privacy, and better screening view of airport facilities from adjacent residential uses.
- Policy P8: Establish a Landscape Maintenance Program for parcels acquired in order to minimize visual impacts on adjacent residents, until the parcels are developed for airport purposes.

Design

The creation of multiple access portals will improve the functional nature of the airport and establish new interfaces with passengers and the adjacent community. The following policies have been established to guide the overall function and appearance of new facilities:

- Policy P1: Appropriately relate those airport facilities that are adjacent to community land uses to the scale and level of activity of those uses.
- Policy P2: Relate Airport Landside facilities to the existing airport infrastructure in a clear, well-organized, functional, and compatible manner.
- Policy P3: Update and/or integrate existing design plans into a comprehensive set of design guidelines for airport facilities.
- Policy P4: Develop and incorporate signage guidelines that provide guidance and establish controls for signage that are appropriate to an airport.

LAX Specific Plan

The LAX Specific Plan provides regulatory controls and incentives for the systematic and incremental execution of the LAX Plan, an element of the City of Los Angeles General Plan. The LAX Specific Plan specifies zoning and development regulations applicable to development at LAX, focusing primarily on land use, transportation, parking, and signage regulations. The LAX Specific Plan includes comprehensive regulations for the airport as a whole, and also regulations specific to individual subareas of LAX (e.g., Airport Airside, Airport Landside, and LAX Northside).

Section 7.I of the LAX Specific Plan also provides that prior to initiation of design of the proposed Project components, LAWA shall prepare LAX Conceptual Design Guidelines to be presented to the Board of Airport Commissioners (BOAC) for its action. These Design Guidelines have been prepared as part of the proposed Project and are included in Appendix B.

LAX Street Frontage and Landscape Development Plan Update

A component of the LAX Master Plan, the LAX Street Frontage and Landscape Development Plan Update (Landscape Development Plan) provides integrated and coordinated landscape design guidelines for new development along the perimeter of LAX, including the southern boundary along Imperial Highway; the eastern boundary, which includes Manchester Square, the Continental City site, and areas north and south of W. 111th Street west of the I-405; the northern boundary, which includes the LAX Northside; and the Dunes to the west. It is not intended as a commitment by LAWA to affect and/or change existing conditions. To develop consistent design guidelines, the Landscape Development Plan focuses on two issues related to the northern and southern buffer areas of the airport: (1) incorporating all necessary airport security guidelines, and (2) maximizing neighborhood compatibility. The Landscape Development Plan also defines a predictable review process to which all new projects along the perimeter of LAX are subject. Projects subject to the Landscape Development Plan typically include, but are not limited to, projects along the LAX perimeter involving the following: tenant improvement projects requiring construction approvals; capital improvement projects; non–Master Plan projects at LAX otherwise subject to CEQA; and LAX Master Plan projects. The objectives set forth in the Landscape Development Plan are identified below:

- Coordinate and enhance the visual and aesthetic appeal of streets, buffer areas, and open space surrounding LAX.
- Maintain and improve safety and security at and surrounding LAX through coordination of street frontage and landscape design with airport security and in compliance with the LAX Wildlife Hazards Management Plan.[14]
- Enhance pedestrian, bicycle, and vehicular circulation on streets internal to and surrounding LAX, and comply with airport security requirements, as feasible and practical.
- Enhance LAX's compatibility with adjacent land uses, neighborhoods, and communities.
- Ensure that street frontage and landscape design is cost-effective, efficient, environmentally-sensitive, and sustainable.
- Provide the basis for the design and review of public and private development projects at LAX by establishing a hierarchy of landscape treatments based on airport gateways and public facilities.

Furthermore, the Landscape Development Plan identifies street classification (including associated wall, fencing, street tree, and bicycle lane standards), landscaping, and neighborhood compatibility requirements specific to projects and/or land uses. The components of the Landscape Development Plan applicable to the proposed Project include:

- **LAX Gateways and Entry Corridors.** LAX Master Plan components considered LAX Gateways and Entry Corridors are the primary roadways and intersections encountered when approaching LAX, including major boulevards, perimeter roadways, gateway intersections, the APMs, and the existing CTA interior loop roadway, World Way. Generally, these corridors and roadways merit the highest level of landscape development to create a strong identity for LAX and provide enhanced wayfinding to public passenger facilities, including interchange gardens, shade trees on both sides of the street, planted central medians, public art, and attractive fencing. Visual screening and landscape buffers are to be provided adjacent to residential uses, except where views of airport open space are available.

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14 Los Angeles International Airport in cooperation with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, *Los Angeles International Airport (LAX) Wildlife Hazard Management Plan*, December 2012.

- **Passenger Terminals and Facilities**. Passenger and transit facilities are the most visible to the traveling public and are considered the highest public use facilities, including those within the CTA and the Airport Landside access components. New structures are to incorporate modern design elements, greater architectural articulation, and more extensive landscaping than currently present.
- **Parking Lots and Parking Structures.** Surface parking lots and the first level of parking structures are to incorporate visual screening from public view with walls and setbacks at the periphery of the airport to maintain neighborhood compatibility.

LAWA Architectural/Design Review Process

Plans for airport improvement projects, from schematic to final, go through a series of reviews starting at the LAWA Facilities Planning Division. The plans are then forwarded for review and comment to various other LAWA divisions. In general, review will be based on compliance with the LAX Design Guidelines (see Appendix B).

Prior to finalization, plans are also forwarded to the City of Los Angeles Department of Building and Safety for review as part of the permitting process. The Department of Building and Safety distributes the plans as appropriate to other City departments, including Planning, Public Works, and Cultural Affairs. Final design approval is required by the Cultural Affairs Commission.

4.1.3.2 Aesthetics and Views

The Project site is located 2 miles east of the Pacific Ocean, within a broad coastal plain that is surrounded by rising land to the south and north, and more-level terrain extending east. The Project site is located in the City of Los Angeles and is bounded by the City of Los Angeles communities of Westchester and Playa del Rey on the north; the City of El Segundo on the south; the unincorporated communities of Del Aire and Lennox, and the City of Hawthorne on the southeast; and the City of Inglewood to the east.

The Project site topography is relatively flat, with elevations ranging from approximately 85 to 130 feet above mean sea level (amsl), generally sloping southeast.[15] Vistas of the Airport, arriving and departing aircraft, and certain Airport structures are visible from off-site approaches to the Airport, particularly along Interstate 105 (I-105) to the south, Lincoln Boulevard to the north, Sepulveda Boulevard traveling north from I-105, and the entrance into the Airport along W. Century Boulevard to the west. As shown on Figure 2-2 within Chapter 2, *Description of the Proposed Project*, the Project site is bounded by the Tom Bradley International Terminal (TBIT) to the west, Interstate 405 (I-405) on the east, Westchester Parkway/W. Arbor Vitae Street on the north, and I-105 on the south. The Project site is primarily developed and heavily urbanized, and comprised of various airport, regional commercial, general commercial, and medium-density residential land uses.

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15 Ninyo & Moore, *Hazardous Materials Assessment, Landside Access Modernization Program, Los Angeles International Airport, Los Angeles, California,* October 14, 2015 (included in Appendix K of this EIR).

4.1.3.2.1 Visual Character

Primary public viewpoints available to the general public traveling to the Airport along primary street corridors including W. Century Boulevard, W. 98th Street, W. 96th Street, S. Sepulveda Boulevard, Lincoln Boulevard, Airport Boulevard, Aviation Boulevard, S. La Cienega Boulevard, and World Way in the CTA. The overall existing visual resource conditions are described below utilizing the viewpoint locations provided on Figure 4.1-1.

I-405 and W. Arbor Vitae

Traveling to the Airport along the I-405, initial views of the Project site are of the area known as Manchester Square. This portion of the Project site is a 135-acre residential area bound by Aviation Boulevard on the west, S. La Cienega Boulevard on the east, W. Century Boulevard on the south, and W. Arbor Vitae Street on the north. As further discussed in Section 4.8*, Land Use and Planning,* this area is currently undergoing acquisition/relocation as part of LAWA's Relocation Plan: Manchester Square and the Belford area.[16] To date, a majority of these residential properties have been acquired through the acquisition and relocation program and demolished. When approaching the Project site from the east, existing views of this area are characteristic of the former residential development. As shown on **Figures 4.1-2**, **4.1-3**, and **4.1-4** (Photograph locations 1, 2, and 3 on Figure 4.1-1) views along the I-405 and W. Arbor Vitae Street are partially obstructed due to existing vegetation, elevation differences along the I-405, and surrounding low- and medium-rise buildings. The predominantly undeveloped and vacant character of the area is evident at higher surrounding elevations or directly adjacent to its boundaries.

S. La Cienega Boulevard, Century Boulevard, and Aviation Boulevard

Manchester Square also includes various commercial uses along the southern boundary between S. La Cienega Boulevard and Aviation Boulevard, as shown on **Figures 4.1-5**, **4.1-6** and **4.1-7** (Photograph locations 4, 5, and 6 on Figure 4.1-1). Existing views when traveling west toward the Airport along W. Century Boulevard consist of two high-rise hotels, low-rise commercial development, a low-rise motel, surface parking, and various billboard and signage elements. As shown on **Figures 4.1-8** and **4.1-9** (Photograph locations 7 and 8 on Figure 4.1-1), existing views from the west when traveling north along Aviation Boulevard indicate that the vacant parcels have been secured with chain-link fencing and hydroseeded with landscaping, which is currently maintained by LAWA. At the northwest corner, along Aviation Boulevard and W. Arbor Vitae Street, existing views consist of other low-rise commercial and office development, as shown on **Figure 4.1-10** (Photograph location 9 on Figure 4.1-1). As such, the existing visual character of the Manchester Square area primarily consists of remaining single- and multi-family residences among the fenced and vacated lots, with hotel, commercial, and office uses along W. Century Boulevard and Aviation Boulevard.

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16 City of Los Angeles, Los Angeles World Airports, *Final LAX Los Angeles World Airports Relocation Plan Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford*, adopted by the Board of Airport Commissioners, June 2000.

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-2

West-Facing View
from I-405 toward CONRAC

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-3

Southwest-Facing View from Arbor Vitae Street toward CONRAC

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PHOTOGRAPH LOCATION 3

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-4

Southwest-Facing View toward CONRAC from I-405 South

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-5

Northwest-Facing View toward CONRAC
from Century Boulevard On-Ramp to I-405 North.

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-6

North-West Facing View
from Century Boulevard/La Cienega Boulevard toward CONRAC

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PHOTOGRAPH LOCATION 6

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AFTER

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-7

Northeast-Facing View from Century Boulevard/Aviation Boulevard toward ITF East

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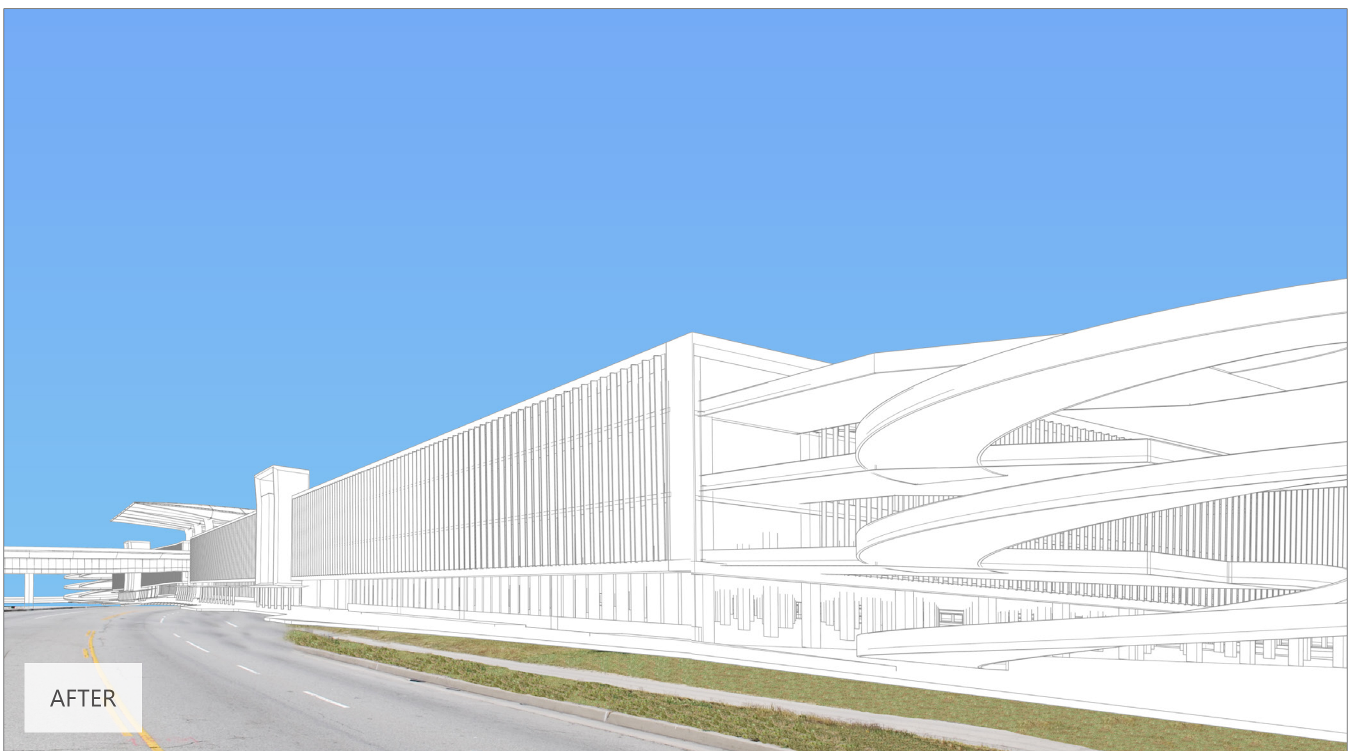
PHOTOGRAPH LOCATION 7



NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-8

Northeast-Facing View
from Aviation Boulevard toward ITF East

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-9

Southwest-Facing View of Aviation Boulevard toward APM and ITF East

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PHOTOGRAPH LOCATION 9

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AFTER

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-10

Southeast-Facing View
from Arbor Vitae Street/Aviation Boulevard toward CONRAC

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It should also be noted that the central portion of Manchester Square includes uses associated with the Stella Middle Charter Academy and Bright Star Secondary Charter Academy facilities, located at 5431 W. 98th Street; these facilities would be acquired and removed prior to Project construction. This portion of the Project site does not contain any valued visual features of significance.

W. Arbor Vitae Street/Westchester Parkway and W. 98th Street

Development between Westchester Parkway/W. Arbor Vitae Street on the north and W. 98th Street on the south consists primarily of surface parking lots (e.g., Lot C and LAX Employee Lot East), multi-level parking structures (e.g., Wally Park), rental car facilities, and low-rise manufacturing and light industrial facilities, as shown on **Figures 4.1-11**, **4.1-12**, **4.1-13**, **4.1-14**, and **4.1-15** (Photograph locations 10, 11, 12, 13, and 14 on Figure 4.1-1). The parcels located east of Airport Boulevard and south of Westchester Parkway/W. Arbor Vitae Street are collectively known as the Belford area.

Similar to the previously described Manchester Square area, the majority of this area has been acquired through LAWA's Acquisition/Relocation Program.[17] The visual character of this area is characteristic of a former residential development. The vacant parcels have been secured with chain-link fencing and hydroseeded, with landscaping currently maintained by LAWA.

Aviation Boulevard toward W. Century Boulevard

The visual character of the area traveling northbound along Aviation Boulevard from Imperial Highway toward W. Century Boulevard, consists of commercial, industrial, and Airport-related uses. LAWA maintains a construction staging area on the site known as Continental City, located along Aviation Boulevard between I-105 and W. 111th Street. North of W. 111th Street is the Proud Bird Restaurant and related surface parking, as well as the adjacent LAX Employee Parking Lot E. Other uses along W. 111th Street include a variety of low- and medium-rise industrial facilities and surface parking lots.

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[17] City of Los Angeles, Los Angeles World Airports, *Final LAX Los Angeles World Airports Relocation Plan Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford*, adopted by the Board of Airport Commissioners, June 2000.

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-11

West-Facing View along 96th Street/APM Alignment

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-12

Northwest-Facing View from 96th Street toward ITF West

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PHOTOGRAPH LOCATION 12

BEFORE

AFTER

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-13

South-Facing View
from Westchester Parkway along Jenny Avenue toward ITF West

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-14

North-Facing View from 98th Street toward ITF West

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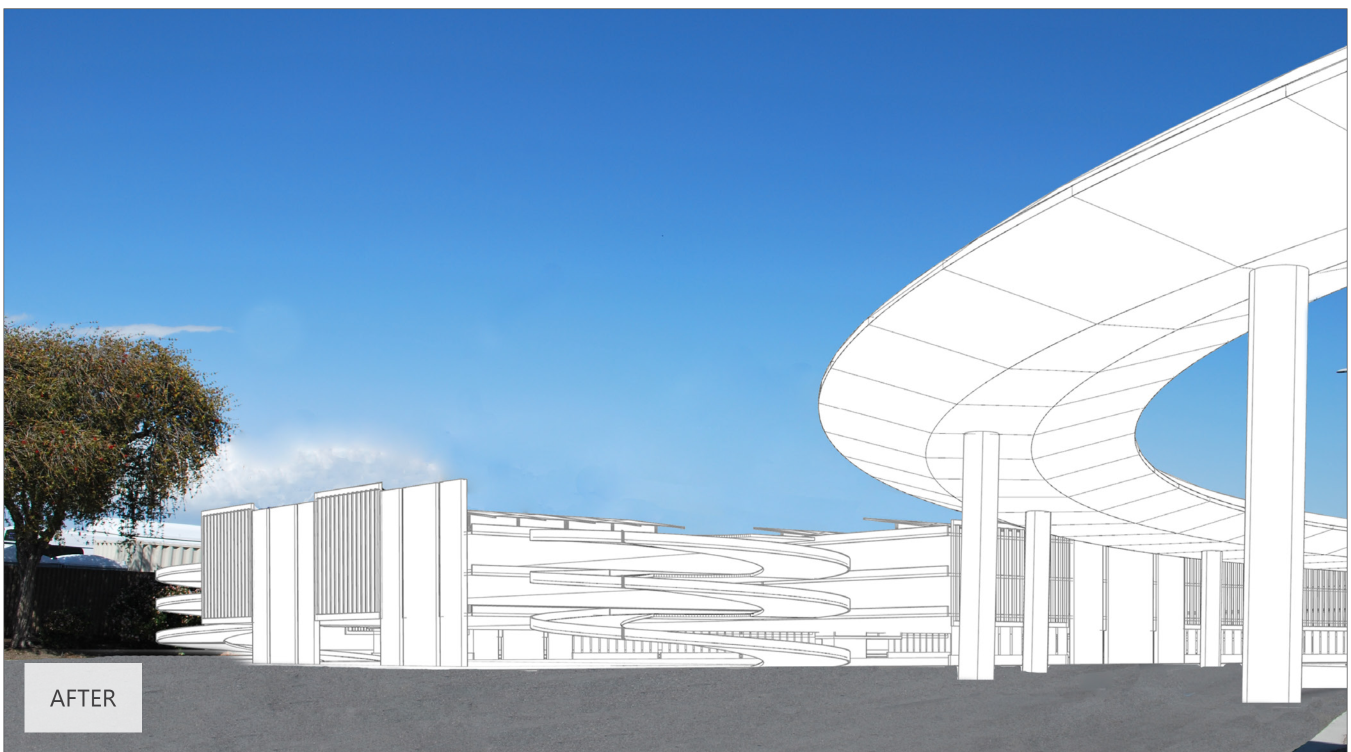

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-15

Northeast-Facing View from 96th Street toward ITF West

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W. Century Boulevard toward the CTA

Traveling westbound along W. Century Boulevard toward the CTA, views are dominated by high-rise hotel and office developments and associated multi-level parking structures, as well as other billboard and signage elements (see **Figure 4.1-16** [Photograph location 15 on Figure 4.1-1]). Numerous hotel and office buildings within the area between S. Sepulveda Boulevard and Aviation Boulevard are considered valued visual features due to the buildings' association with circa-1960s off-airport development. Primarily located along W. Century Boulevard, these mid- to high-rise hotel and office buildings contribute to the overall visual character of the area. Along the south side of W. Century Boulevard from Aviation Boulevard to S. Sepulveda Boulevard, views are characterized by low- to medium-rise industrial structures, including various hangar and cargo facilities, multi-level parking structures, offices, and Los Angeles Fire Department Station 95. This portion of the Project site consists of 11 illuminated pylons along W. Century Boulevard, which are a component of the Gateway LAX Enhancement Project. As shown on **Figure 4.1-17** (Photograph location 16 on Figure 4.1-1), the illuminated pylons (ranging from 25 to 60 feet in height) are located within the W. Century Boulevard median, which is landscaped with palm trees, shrubs, and other ornamental plants. The landscaping, the rows of palm trees, and the large-scale modern hotels along W. Century Boulevard together create a "Southern California" thematic impression.

S. Sepulveda Boulevard

Westbound views of the CTA become more apparent at the intersection of W. Century Boulevard and S. Sepulveda Boulevard. This interchange consists of numerous roadways and ramps that access terminal departure and arrival areas, and provides access between S. Sepulveda Boulevard and W. Century Boulevard (see **Figure 4.1-18** [Photograph location 17 on Figure 4.1-1]). The illuminated pylons and letters denoting LAX visible along S. Sepulveda Boulevard are considered valued visual features because they serve as a gateway to LAX for travelers approaching the Airport.

Long-range views of the development east of the CTA, as seen by travelers along eastbound Lincoln Boulevard, are shown on **Figure 4.1-19** (Photograph location 18 on Figure 4.1-1).

Central Terminal Area

The CTA, located on the western portion of the Project site, encompasses the Airport Landside uses associated with nine passenger terminals, connected by a ring-shaped, two-level World Way roadway. The CTA is bound by TBIT on the west and S. Sepulveda Boulevard on the east, with ingress and egress through the LAX Airport entrance interchange.

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-16

Northeast-Facing View
from Century Boulevard toward APM Alignment

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[Preliminary Draft for Discussion Purposes Only]

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-17

West-Facing View along Century Boulevard toward APM Alignment

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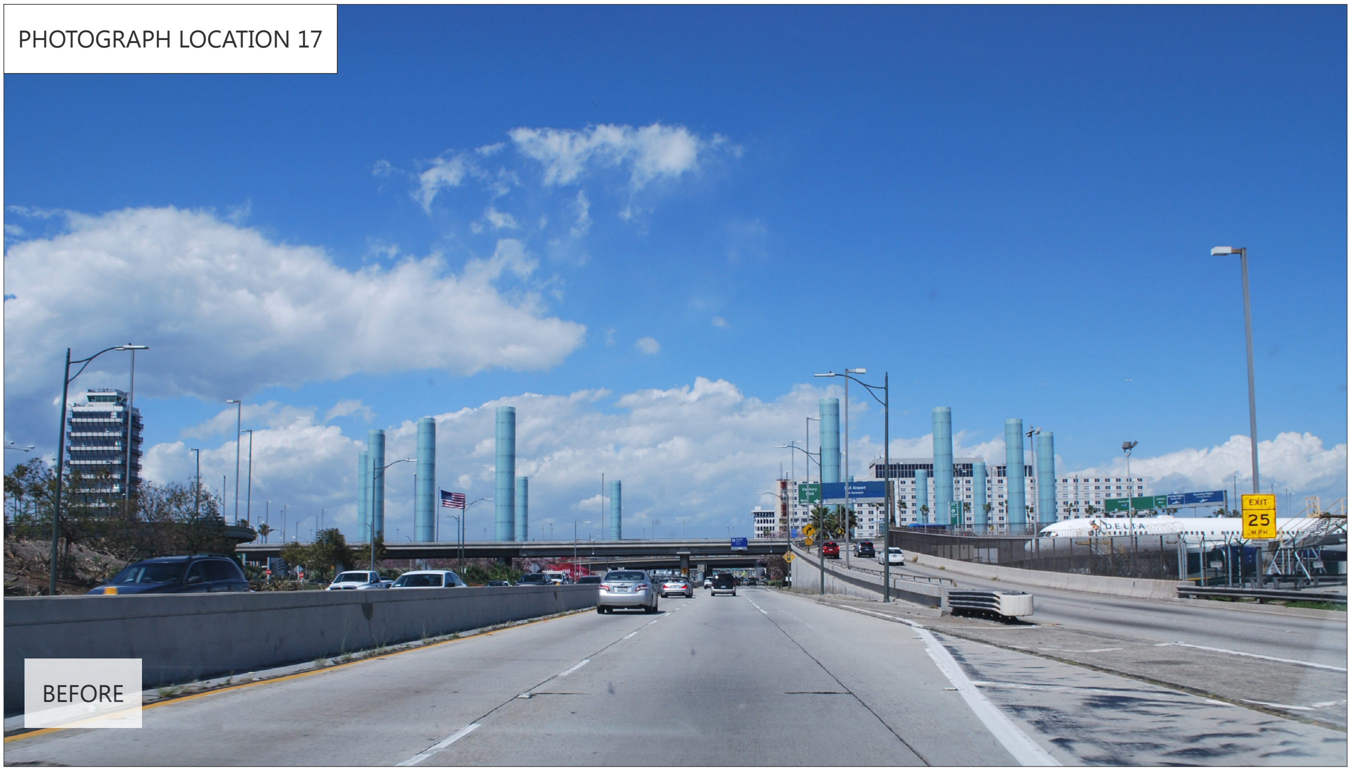
PHOTOGRAPH LOCATION 17



NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-18

North-Facing View along Sepulveda Boulevard

[Draft]

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PHOTOGRAPH LOCATION 18

BEFORE

AFTER

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-19

Southeast-Facing View from Lincoln Boulevard

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As shown on **Figures 4.1-20**, **4.1-21**, **4.1-22**, and **4.1-23** (Photograph locations 19, 20, 21, and 22 on Figure 4.1-1) views when traveling within the CTA are mainly characterized by the frontages of passenger terminals; surface and structured parking lots; passenger walkways connecting the parking structures with the terminals; and Airport support facilities. Other contributing visual elements within the CTA include heavy vehicle volumes—such as private automobiles, transit buses, courtesy shuttles, shared ride vans, taxis, charter buses, and other commercial vehicles—as well as construction vehicles for ongoing projects. The streetscape of the CTA is generally characterized as pedestrian-oriented, with numerous sidewalks and passenger walkways accessible on both roadway levels via stairway, elevator, and escalator. Airport wayfinding signs and street-lighting elements are placed throughout the CTA to create a visible and accessible area for both motorists and pedestrians.

Prominent features of the CTA include the Theme Building and the 1961 airport traffic control tower (ATCT). As described in Section 4.4.3.3.2, *Cultural Resources,* the Theme Building (constructed in 1961–1962) lies within the center of the CTA's U-shaped concourse pattern, and houses an observation deck and restaurant space at approximately 70-feet above grade. With its parabolic arches and flying saucer-shaped restaurant suspended between them, the Theme Building was the centerpiece of the large expansion of LAX as a new "Jet Age" airport. The Theme Building is currently designated as a City of Los Angeles Historic-Cultural Monument LAHCM and is eligible for listing in the National Register.[18] The 1961 ATCT forms the eastern terminus of the central axis of the CTA and is surrounded by various landscaping features. The 1961 ATCT is a Mid-century Modern style building with steel frame and reinforced concrete construction. It is composed of two main parts: the 13-story ATCT and the 2-story Administration Building surrounding the base. As described in Section 4.4, *Cultural Resources,* despite alterations to the 1961 ATCT, it continues to convey historic association with the Jet Age redesign of LAX and is eligible for listing as a LAHCM.

Initial views of the Theme Building and the 1961 ATCT, as well as the 1996 ATCT, can be seen by travelers circulating within CTA, as shown on Figure 4.1-21 (Photograph location 20 on Figure 4.1-1). Due to the distinctive heights of these structures, long-range views are visible by motorists traveling on surrounding roadways. However, as discussed in further detail in Section 4.4, *Cultural Resources*, these long-range views are obstructed in some areas by multi-story buildings, roadways, and structures. Heavy traffic volumes and stop-and-go delays from intersection movements also inhibit views of the CTA for motorists.

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[18] City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Appendix I, Section 106 Report*, prepared by PCR Services Corporation, January 2001, and *Appendix S-G, Supplemental Section 106 Report,* prepared by PCR Services Corporation, June 2003.

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-20

West-Facing View of CTA from World Way (upper deck)

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-21

Northwest-Facing View of CTA from World Way (upper deck)

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PHOTOGRAPH LOCATION 21

NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-22

Northeast-Facing View from World Way toward P4 Parking Garage

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NOTE: Photograph location corresponds to the key map in Figure 4.1-1.
SOURCE: Meridian Consultants, October 2015; Ricondo & Associates, Inc., November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-23

Southeast-Facing View from World Way toward P3 Parking Garage

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4.1.3.3 Shading

A majority of the Project site is developed with a variety of buildings and structures that cast shadows across the area. Minimal shading exists within the eastern portion of the Project site due to the primarily vacant character of the area. The remaining residential buildings, ranging from 1 to 4 stories in height, do not cast significant shadows. Shading within the southern portion of the Project site along 111th Street is attributed to various 1- and 2-story commercial, industrial, and Airport-related uses. The shading generated by the existing uses does not create significant shading within the Project site.

The portion of the Project site along W. Century Boulevard, between Aviation Boulevard and S. Sepulveda Boulevard, is predominately characterized by mid- to high-rise hotel and office buildings; low-rise manufacturing and light industrial facilities; mid-rise hangar and cargo development buildings; surface parking lots; multi-story parking structures; and low-rise rental car facilities and restaurants. This portion of the Project site is also characterized by other elements, such as billboards, signage, landscaping, and the illuminated pylons within the W. Century Boulevard streetscape. Development within this area, particularly along W. Century Boulevard, creates varying degrees of shading typical of an area with high-density urban development. The areas north of W. Century Boulevard consist of low- to medium-rise structures and surface parking lots that do not cast shadows on shadow-sensitive uses.

The CTA comprises nine passenger terminals ranging from 2 to 5 stories in height; eight structured parking lots ranging from 3 to 5 stories in height; and seven passenger walkways connecting the parking structures to the terminals. Other structures in the CTA include the 2-story Clifton A. Moore Administration Building; the 289-foot-tall 1996 ATCT; the 172-foot-tall 1961 ATCT; the 135-foot-tall Theme Building; various Airport facility buildings; and various roadways and ramps. This existing development creates various lengths of shade within the CTA. However, no shadow-sensitive uses are located within the CTA nor are any shadow-sensitive uses close enough to be impacted by any shading within the CTA.

4.1.3.4 Light and Glare

The Project site is located in a highly urbanized area within the City of Los Angeles, surrounded by other cities, including Inglewood to the east, El Segundo to the south, and Hawthorne to the southeast. These areas have numerous light sources that generate varying degrees of light emissions. Light sources located close to light-sensitive receptors are most pertinent for analysis. Light-sensitive receptors near the Project site are primarily residential uses located north of Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue. The hotel buildings along W. Century Boulevard and Airport Boulevard are also considered light-sensitive uses within the Project vicinity.

Existing light sources throughout the Project site are typical of a highly developed area containing various commercial, light industrial, and Airport uses, with lighting sources within the eastern portion of the Project site considered minimal due to the primarily vacant character of the area. Existing daytime sources of glare on the Project site are associated with the reflective glass or mirror-like materials comprising the facades of facilities and structures within the CTA and of the mid- to high-rise buildings east of the CTA. Existing nighttime sources of glare are primarily associated with vehicle headlights traveling throughout the Project site.

Exterior lighting is used throughout the Project site to illuminate terminal and Airport facilities, buildings, parking lots and structures, pedestrian walkways, roadways, and signage, resulting in a range of low to high ambient nighttime levels. Sources of illumination throughout the Project site include light from billboards; hotels; commercial, office, and residential buildings; street lights; and other security lighting. Illumination sources within the CTA include street lights, security lights, roof perimeter lights, parapet lights, terminal entrance lights, and the recently installed ribbon night-lighting around the terminal frontages. The illuminated pylons within the W. Century Boulevard streetscape and the LAX signs located within the CTA and at the intersection of S. Sepulveda Boulevard and Lincoln Boulevard utilize low-level lighting that does not shine off-site. Under current conditions, the nighttime illumination within the CTA provides for the safe and secure movement of pedestrians and vehicles, and does not interfere with the nighttime visibility of ATCT operators and incoming pilots. Similarly, no buildings, structures, or facilities within the CTA currently generate adverse glare. In general, ambient nighttime light levels emanating from the uses along W. Century Boulevard are more noticeable than are those from the CTA.

Nighttime lighting associated with Parking Lots C and D are visible from the residential uses north of the Project site along Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue. Parking Lots C and D currently have 6-foot-tall fences and walls that are set within 15-foot landscaped buffers along the street frontages. The parking lot lights are similar in intensity to the adjacent streetlights. Although located throughout the large surface parking lots, these lights are not at the perimeters and are shielded and directed. Thus, there is limited light spillover onto light-sensitive uses.

The Project site does not contain any sources of light or glare that currently interfere with daytime or nighttime visibility. As the levels of lighting are typical of this land use mix in an urban area, there are no existing light sources that conflict with adjacent uses.

4.1.4 THRESHOLDS OF SIGNIFICANCE

4.1.4.1 Visual Character

A significant impact pertaining to visual character would occur if the proposed Project would result in one or more of the following conditions:

- Introduction of features that would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.) or cause an inconsistency with applicable design guidelines.
- Removal of one or more features that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area such as demolition of structures or removal of street trees, a stand of trees, or other landscape features that contribute positively to the valued visual image of a community.
- Obstruction, interruption, or diminishment of a valued focal or panoramic view or view from any designated scenic highway, corridor, or parkway.

These three thresholds reflect criteria contained in the *L.A. CEQA Thresholds Guide*[19] relevant to the proposed Project.

4.1.4.2 Shading

A significant shading impact would occur if the proposed Project would result in the following condition:

- A project impact would normally be considered significant if shadow-sensitive uses would be shaded by project-related structures for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (PST) (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (PDT) (between early April and late October).

This threshold reflects criteria contained in the *L.A. CEQA Thresholds Guide*[20] relevant to the proposed Project.

4.1.4.3 Light and Glare

With respect to light emissions and glare, a significant impact would occur if the proposed Project would result in the following conditions:

- A change in lighting or lighting intensity such that light would spill off the project site and affect light-sensitive areas; or
- A substantial new source of glare, or a change in the built environment, which would adversely affect day or nighttime views in adjacent areas sensitive to glare.

These thresholds are derived from the *L.A. CEQA Thresholds Guide*[21] and Appendix G of the State CEQA Guidelines.

4.1.5 IMPACT ANALYSIS

4.1.5.1 LAX Landside Access Modernization Program Project

4.1.5.1.1 Visual Character

As detailed in Chapter 2, *Description of the Proposed Project*, the proposed Project would introduce new uses to the area, including an APM, ITFs, and a CONRAC. The proposed Project would also include a series of roadway improvements. A discussion of aesthetic impacts related to the construction and operations of the proposed Project is provided below:

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[19] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

[20] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

[21] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Construction

Construction of the proposed Project would result in temporary changes to the visual character of the Project area, as viewed from surrounding uses and nearby vantage points. Construction activities within designated staging areas (Zones 1 through 4) would be located adjacent to or within the construction sites for the proposed facilities to minimize any visual nuisances within surrounding areas (see Figure 2-50). Depending on the type of activity occurring at any given time throughout the Project's estimated 17-year construction schedule, construction activities would include demolition, site clearing, grading, and building construction of each of the Project components. Typical construction equipment would include tractors, backhoes, scrapers, pavers, cranes, and pile drivers, and other typical construction equipment. All construction activities near sensitive receptors would incorporate temporary construction fencing to screen construction activities and the previously identified equipment. This temporary construction fencing, such as various screening, pedestrian canopies, and other appropriate buffer mechanisms, would be placed along the periphery of each of the designated staging areas to screen much of the construction activity along major public approach and perimeter roadways, such as W. Century Boulevard, S. Sepulveda Boulevard, Aviation Boulevard, W. Arbor Vitae Street, and S. La Cienega Boulevard. While construction of the proposed Project would introduce new features, the existing area is highly urbanized with a variety of airport buildings, hotels, offices, surface parking lots, vacant lots, scattered residential, and light industrial uses. As such construction of the proposed Project would not conflict or contrast with important aesthetic elements or the quality of the area; thus, impacts would be less than significant.

Construction of the proposed Project would involve the acquisition and demolition of existing facilities, as identified in Section 2.5, *Enabling Projects*, to accommodate construction of the proposed Project components. The demolition of these existing facilities, which include existing parking structures and roadways, and airport, commercial, industrial, and residential properties, would be staggered throughout the Project site and coordinated with the construction-phasing schedule. As discussed in Section 4.4, *Cultural Resources,* the two-story Administration Building, located at the base of the 1961 ATCT, has been substantially altered since its construction in 1961 and no longer retains sufficient integrity to convey historic significance. Therefore, demolition of the Administration Building would not involve the removal of a feature that contributes to a valued aesthetic character or image of the area. As such, the removal of existing facilities during construction of the proposed Project would not result in impacts to any structures that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area.

Areas where construction activities within all four of these staging area zones would be most visible include the hotel, commercial, and office uses along W. Century Boulevard, W. Arbor Vitae Street, W. 96th Street, Airport Boulevard, and Aviation Boulevard. Construction staging Zone 4, consisting of the mostly vacated Manchester Square area, would be visible from surrounding commercial, industrial, and surface parking uses. Views of construction staging Zone 4 may also be seen from a limited number of residences east of the I-405. However, views of the Project site east of the I-405 are limited due to existing vegetation and elevation differences along the I-405, as well as by surrounding low- and medium-rise buildings located within the area. Additionally, a number of sound walls of varying height, such as the 6-foot-tall fences and landscape buffers separating the residential uses north of Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue would shield views of construction activities from the north.

While construction activities would be visible from on- and off-site vantage points, there are no notable views on the Project site; nor is the Project site located within a scenic highway, corridor, or parkway. As discussed in Section 4.3, *Biological Resources*, the proposed Project would involve the removal of various ornamental trees and six native street trees throughout the Project site to accommodate construction activities. The six native trees, all located along Hindry Place in the Manchester Square neighborhood, meet the criteria for being a locally-protected tree, the western or California sycamore, under the City of Los Angeles Protected Tree Ordinance (Chapter IV, Article 6 of the Los Angeles Municipal Code). [22] However, the six native trees are located within the interior of the largely vacant Manchester Square neighborhood and are not considered valued visual resources. In addition, as described in Section 4.3, *Biological Resources*, prior to removal of any locally-protected trees or street trees within the public right-or-way, LAWA would obtain the necessary permits, as required by the City of Los Angeles Protected Tree Ordinance and Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170. As such, construction of the proposed Project would not result in the obstruction, interruption, or diminishment of a valued focal or panoramic view or view from any designated scenic highway, corridor, or parkway.

Since the designated staging areas do not contain notable views or valued aesthetic resources, short-term impacts related to temporary construction activities would not obstruct, interrupt, or diminish a valued focal or panoramic view from any designated scenic highway, corridor, or parkway. As previously described, the proposed Project would incorporate various temporary construction fencing features to screen much of the construction activities along major public approach and perimeter roadways. The treatment of the fencing would reduce temporary visual impacts. Additionally, construction of the proposed Project would not result in the removal of one or more features that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area such as demolition of structures or removal of street trees, a stand of trees, or other landscape features that contribute positively to the valued visual image of a community. Therefore, visual character impacts related to construction of the proposed Project would be less than significant.

Operations

Implementation of the proposed Project would involve the operation of a modern airport transportation system that would connect passengers with uses outside the CTA. These airport uses would consist of an elevated APM guideway, APM stations, an APM maintenance and storage facility (MSF), APM traction power substations, ITFs, a CONRAC, roadway improvements, and other airport amenities, such as dining and concession services, baggage check facilities, and ticketing/information kiosks. These proposed uses would be placed on areas designated as Airport Landside, which include uses to facilitate the movement of passengers and overall flow into the CTA. Additionally, the proposed Project would include various roadway improvements. These proposed roadway improvements would be integrated to create a more cohesive and fluid street network to support airport operations.

[22] City of Los Angeles, Ordinance No. 177,404, Protected Tree Relocation and Replacement, April 23, 2006.

The proposed Project would replace the underutilized uses within the 135-acre site currently known as Manchester Square with the ITF East and CONRAC, which would connect to the CTA via the APM. Development within Manchester Square would also include construction of new roadways that would provide access to the ITF East and CONRAC facilities. The replacement of these existing uses would not result in the removal of visual resources that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area. As shown in Figures 4.1-2 through 4.1-10 (Photograph locations 1 through 9 on Figure 4.1-1), the scale and massing of the ITF East and CONRAC would be compatible with surrounding low- and medium-rise buildings and would not be out of character for the area. The proposed building heights would be similar to or less than those of surrounding buildings, with the heights of the CONRAC and ITF East and buildings at no more than approximately 85 feet above grade. In accordance with the LAX Design Guidelines, the CONRAC and ITF East would incorporate street trees within the street right-of-ways adjacent to the airport facilities and other surrounding properties. A landscape buffer zone would also be incorporated around the CONRAC and ITF East facilities, which could include screening elements, such as open space areas or bioswales/stormwater management areas, to provide a softened transition to the surrounding uses. Landscaping along the eastern perimeter of the CONRAC would comply with the Landscape Development Plan to ensure visual compatibility with surrounding uses east of the Airport.

Continuing west toward the Airport, the proposed Project would include development of round columns to support the APM guideway, which would span 2.25 miles from the CONRAC to the CTA, primarily along the W. 96th Street Corridor. As shown in Figures 4.1-11 and 4.1-12 (Photograph locations 10 and 11 on Figure 4.1-1), the scale and massing of the APM guideway would be compatible with surrounding urban environment. The APM guideway would follow the movement of the underlying street system to minimize conflicts with existing infrastructure. In accordance with the LAX Design Guidelines, the design of the APM guideway would be rectilinear with a tapered edge profile to make the structure appear lighter and more refined.

The proposed Project would also include the development of the ITF West and APM MSF between the CONRAC and the CTA. Similar to the ITF East, the ITF West would consist of two multi-level parking structures and an APM station with building heights similar to surrounding uses. The multilevel MSF would be located east of the ITF West and would have a maximum height of approximately 90 feet. As shown in Figures 4.1-13 through 4.1-15 (Photograph locations 12, 13, and 14 on Figure 4.1-1), the proposed ITF West and MSF would replace existing surface parking and vacant lots with parking structures, maintenance facilities, transportation operations, and other airport uses. This portion of the Project site would also consist of various roadway improvements, including reconfigured roadways and additional at-grade and elevated ramps. These roadway improvements would support the circulation and access of private vehicles, buses, taxis, shuttles, and other vehicles utilizing the ITF West. While these roadway improvements would result in a change in the visual character of the existing area, these improvements would be consistent with an airport transportation system and would not would not conflict or contrast with important aesthetic elements or the quality of the area; thus, impacts would be less than significant. As such, the airport uses that would be introduced by the ITF West and MSF would not be substantially different than what currently exists within the area. These proposed components would ultimately serve as a visual backdrop to link the APM guideway and stations with uses outside the CTA.

The APM guideway would then transect W. Century Boulevard and connect into the CTA across the various roadways and ramps that currently comprise the LAX Airport entrance interchange at S. Sepulveda Boulevard and W. Century Boulevard. In accordance with the LAX Design Guidelines, the APM guideway would provide a smooth aesthetic transition between the CTA and the uses outside the CTA, including those on the south side of Century Boulevard. As previously described, the scale and massing of the APM guideway would be consistent with the surrounding urban environment. Available views are currently limited due to the high-density development, various billboard and signage elements, and landscaping features. As shown in Figures 4.1-16 through 4.1-19 (Photograph locations 15 through 18 on Figure 4.1-1), the APM guideway and other Project components would be within the existing building skyline and would not dominate the viewshed as seen along W. Century Boulevard, S. Sepulveda Boulevard, and Lincoln Boulevard. These proposed structures would be unique to the area; however, they would not conflict or contrast with important aesthetic elements or the quality of the area; thus, impacts would be less than significant.

The proposed Project would introduce new structures within the CTA, including the APM guideway and three APM stations, which would include pedestrian walkways and vertical circulation cores to convey passengers to the existing terminals and parking garages. These additional structures would be located on an elevated guideway between the parking garages and terminal facilities, which do not collectively contribute to the aesthetic quality of the CTA. As shown in Figures 4.1-20 through 4.1-23 (Photograph locations 19 through 22 on Figure 4.1-1), the APM guideway and stations would be a similar use within the CTA and would maintain a consistent aesthetic character to complement existing Airport structures, as well as the Theme Building, the 1961 and 1996 ATCTs, and the illuminated pylons. Additionally, at least three APM traction power substations would be located in the vicinity of the East CTA station, the ITF West, and the ITF East/CONRAC stations would be secured with chain link fencing and vehicular double swing gates. These APM traction power substations would incorporate various landscaping elements to provide a consistent aesthetic character with the other APM facilities. As such construction of the APM traction power substations would not conflict or contrast with important aesthetic elements or the quality of the area; thus, impacts would be less than significant.

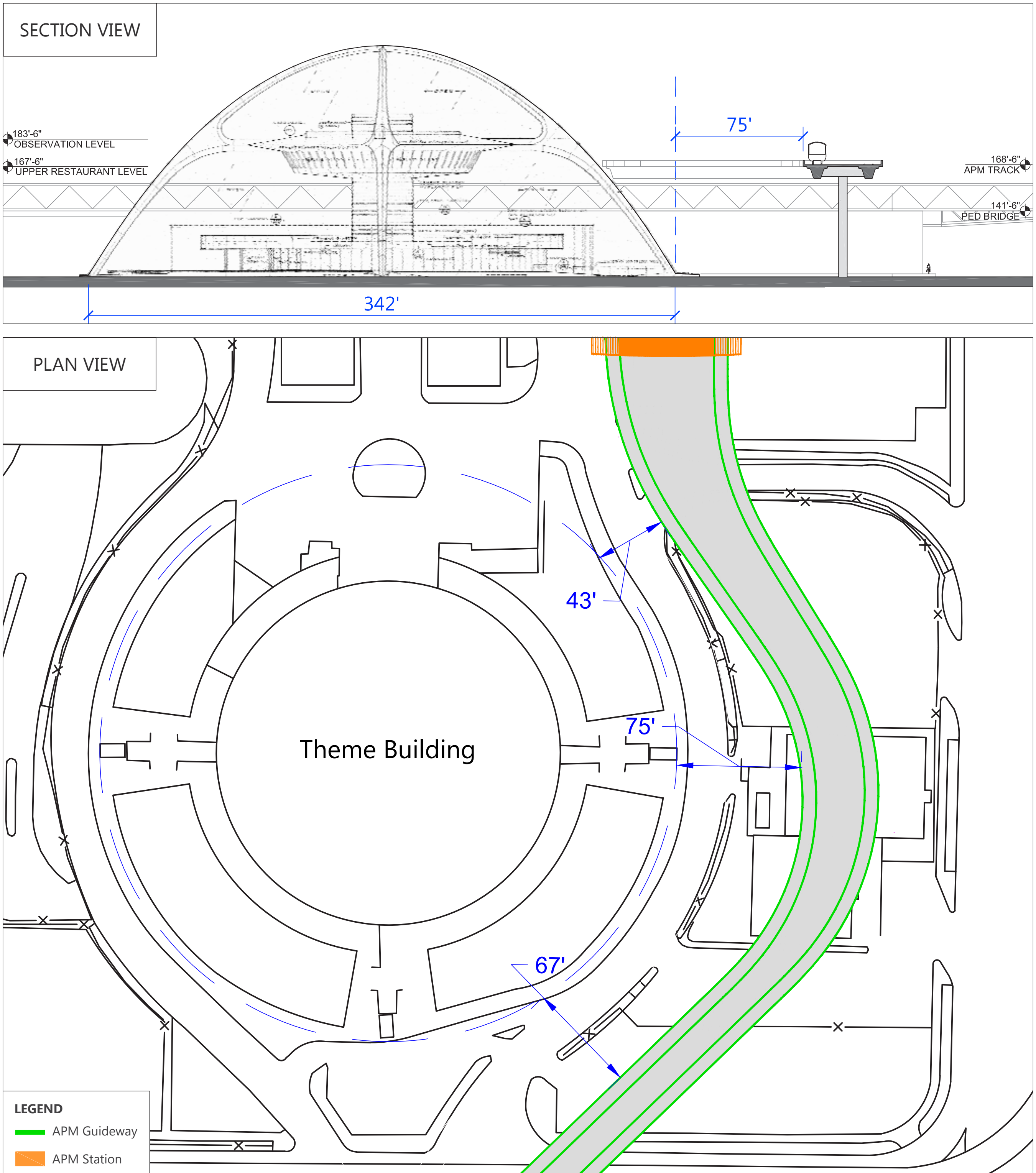
As shown in Figure 4.1-21 (Photograph location 20 on Figure 4.1-1), the APM guideway would not compromise existing views of the 1961 ATCT from this vantage point within the CTA. The APM guideway would be approximately 70 feet above grade (approximately half the height of the 13-story 1961 ATCT) and would be designed to preserve and protect the 1961 ATCT in its existing location. The APM guideway would closely encroach the south side of the 1961 ATCT and partially obscure views of lower portions of the tower from the south. However, despite these encroachments, the 1961 ATCT would remain a dominant visual feature within the CTA. As such, the proposed Project would not obstruct, interrupt, or diminish a valued focal or panoramic view or view from any designated scenic highway, corridor, or parkway; thus, visual impacts to the 1961 ATCT would be less than significant.

While the APM guideway would not compromise existing views of the Theme Building from the vantage point shown in Figure 4.1-21 (Photograph location 20 on Figure 4.1-1), it would affect other vantage points (see Section 4.4, *Cultural Resources*).

Figure 4.1-24 shows the APM guideway alignment around the Theme Building structure; at its closest point the APM guideway would be approximately 75 feet from the Theme Building structure. However, due to the proximity of the APM guideway and operating trains on the north side, as well as the proximity of the passenger walkway for the Center CTA APM Station at approximately 20 feet west of the Theme Building, notable public views of the Theme Building within the CTA would be degraded. The introduction of the APM guideway and pedestrian walkway within proximity to the Theme Building would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.).

Overall, the CTA and other Airport Landside uses are distinguished by a highly-built environment comprised of a variety of architectural styles and building materials, a high level of continuous vehicle and pedestrian activities, as well as numerous ongoing construction activities. The proposed Project would conform to this existing environment by introducing elements of the Modern architectural design that are appropriate for an airport destination area providing services to Airport passengers. A variety of edge and landscape treatments would also be incorporated into the design of the Project, in accordance with the LAX Design Guidelines and the Century Boulevard Streetscape Plan, to create a cohesive, attractive, and functional environment for multiple users of the Airport. The proposed Project would comply with the aesthetic-related goals and policies identified in Section 4.1.3 for the LAX Plan, LAX Specific Plan, and Westchester–Playa del Rey Community Plan, which would establish buffers between the Project components and the community. The proposed Project would also comply with the goals and policies of the Mobility Plan 2035 by integrating streetscape signage and wayfinding, street trees and landscaping, and street lighting elements to integrate safe, accessible, and vibrant streets within the City. As such, the proposed Project would create a visual continuity of streetscapes that would encourage pedestrian activity and consistency of quality airport and related uses. This visual enhancement would support the function of a transportation-oriented environment near the Airport that would be conducive with the Airport's image as a gateway to the City of Los Angeles.

Therefore, as the Project site does not contain notable views or valued aesthetic resources, the development of the proposed Project components would not obstruct, interrupt, or diminish a valued focal or panoramic view from any designated scenic highway, corridor, or parkway. While the proposed Project would not substantially contrast with the visual character of the surrounding area and its aesthetic image or cause an inconsistency with applicable design guidelines, the introduction of the APM guideway and pedestrian walkway within proximity to the Theme Building would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.). Impacts would be significant.



SOURCE: MapLAX, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-24

Proposed APM Guideway
Adjacent to Theme Building

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4.1.5.1.2 Shading

Construction

Construction of the proposed Project would involve various demolition, site clearing, grading, and building construction activities. Such activities would require scaffolding and usage of heavy equipment, including crane equipment. The usage of scaffolds and tall construction equipment, such as cranes and pile drivers, would cast shadows. However, construction equipment would move throughout workdays and would vary throughout the construction-phasing schedule.

Construction activities within designated staging areas (Zones 1 through 4) would be located adjacent to or within the construction sites (see Figure 2-50). Various screening and other appropriate buffer mechanisms would also be incorporated throughout the construction period to screen construction activities near sensitive uses. As identified in Table 4.1-1, shadow-sensitive uses that would be affected by construction of the proposed Project are limited to the residential uses north of Westchester Parkway/W. Arbor Vitae Street, between S. Sepulveda Boulevard and Bellanca Avenue; and the hotel buildings along W. Century Boulevard and Airport Boulevard. The majority of these shadow-sensitive uses are not located within a close enough proximity to construction staging areas to be affected by any shading. The shadow-sensitive uses that would be located adjacent to designated staging areas, and likely to be affected by shading, include the LAX Sheraton Gateway Hotel (Zone 3); the Super 8 LAX (Zone 3); the Renaissance LAX Hotel (Zone 3); the Four Points Sheraton Hotel (Zone 3); the Travelodge Hotel LAX (Zone 4); and the Westin (Zone 4). However, based on the relation to where tall construction equipment would be utilized and the location of casted shadows, which are typically projected to the east or west of true north, construction activities would not cast shadows on these uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. Pacific Standard Time (PST) (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. Pacific Daylight Time (PDT) (between early April and late October).

Furthermore, the Project site is located in a highly-built environment with many existing sources of shading. Any shading cast by construction equipment or scaffolding would be temporary and would not substantially contribute to existing shading within the area. The designated staging areas would be fenced off during construction using chain link fencing with screening. The use of this fencing would minimize the casting of shadows on surrounding uses for a substantial amount of time. Therefore, construction of the proposed Project would not shade shadow-sensitive uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. PST (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. PDT (between early April and late October). Temporary construction impacts related to casting shadows on sensitive uses would be less than significant.

Operations

The proposed Project would include an elevated APM guideway, APM stations, and an APM MSF, APM traction power substations, ITFs, a CONRAC, roadway improvements, and other Airport amenities. The proposed Project would be located in a highly-built environment and would be consistent with the character of the surrounding area. Between the CTA and the uses outside the CTA, there are currently many sources of shading, which shift throughout the day and move throughout the year. Based on the heights of the proposed structures, shadows would be cast on surrounding uses. As described in Section 4.1.2, the nearest shadow-sensitive uses that would be affected by the proposed Project include the residential uses north of Westchester Parkway/W. Arbor Vitae Street, between S. Sepulveda Boulevard and Bellanca Avenue; and the hotel buildings along W. Century Boulevard and Airport Boulevard. The approximate distance of the closest proposed Project component to each of these shadow-sensitive uses is identified in **Table 4.1-2**.

Table 4.1-2: Approximate Distance of Closest Proposed Project Components to Shadow-Sensitive Uses [1/]

NO.	SHADOW-SENSITVE USE	APPROXIMATE ADDRESS	NEAREST PROPOSED PROJECT COMPONENT	APPROXIMATE DISTANCE (FEET)	DIRECTION
1	Concourse Hotel	6225 W Century Blvd, Los Angeles	APM Guideway	540	South
2	Courtyard LAX/Century Blvd.	6161 W Century Blvd, Los Angeles	APM Guideway	375	East
3	LAX Sheraton Gateway Hotel	6101 W Century Blvd, Los Angeles	APM Guideway	150	West
4	Crowne Plaza LAX	5985 W Century Blvd, Los Angeles	APM Guideway	650	West
5	Embassy Suites	9801 Airport Blvd, Los Angeles	APM Guideway	800	North
6	LAX Marriott	5855 W Century Blvd, Los Angeles	APM Guideway	850	North
7	Four Points Sheraton Hotel	9750 Airport Blvd, Los Angeles	APM Guideway	400	North
8	Renaissance LAX Hotel	9620 Airport Blvd, Los Angeles	APM Guideway ITF West	150 500	North Northwest
9	Super 8 LAX	9250 Airport Blvd, Los Angeles	APM MSF	140	East
10	LAX Hilton	5711 W Century Blvd, Los Angeles	APM Guideway	1,000	North
11	Travelodge Hotel LAX	5547 W Century Blvd, Los Angeles	ITF East	150	North
12	The Westin LAX	5400 W Century Blvd, Los Angeles	CONRAC	950	North
13	La Quinta Inn & Suites LAX	5249 W Century Blvd, Los Angeles	CONRAC	650	North
14	Holiday Inn LAX	9901 S La Cienega Blvd	CONRAC	600	North
15	Residential Development [2/]	Corner of Ramsgate Ave. and Morley St., Los Angeles	APM MSF	300	Southwest

NOTES:

1/ Excludes proximity to proposed roadway improvements as these would not cast shadows, or in the case of the ramp improvements, would be overshadowed by the APM guideway. Distance based on proximity to structures proposed by Project.

2/ Location based on closest shadow-sensitive uses to the proposed Project components.

SOURCE: Meridian Consultants, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

As shown in **Figure 4.1-25**, the proposed Project's winter solstice shadows would not shade any nearby shadow-sensitive uses for more than three hours between 9:00 a.m. and 3:00 p.m. As shown in **Figure 4.1-26** the proposed Project's summer solstice shadows would not shade surrounding nearby shadow-sensitive uses for more than four hours between 9:00 a.m. and 5:00 p.m. According to the *L.A. CEQA Thresholds Guide*, a structure greater than 60 feet in height generally casts shadows within a distance three times its height.[23] Depending on the time of day and season of the year, shadows cast by a structure are typically projected to the east or west of true north. A discussion of shadow impacts for each of the proposed Project components, excluding the roadway improvements, is provided below.

Automated People Mover Operating System

As described in Chapter 2, *Description of the Proposed Project*, the APM operating system would include the APM guideway, six APM stations (three within the CTA and three east of the CTA), an APM MSF, and at least three APM traction power substations. The APM guideway would be grade-separated with an elevation varying between approximately 70 feet above grade within the CTA, to approximately 50 feet above grade near the ITF East and CONRAC. The CTA APM stations would range from maximum heights of 100 to 120 feet above ground level, and the APM MSF would have a maximum height of 90 feet above ground level. The three APM traction power substations would be approximately 3,000 sq. ft. in size and would be located within the vicinity of the East CTA APM Station, and ITF West, and ITF East. As these APM traction power substations would not exceed 60 feet in height and would contribute to the overall massing of the APM operating system, they would not substantially contribute any individual shadows.

At its closest points along the 2.25-mile span, the APM guideway would be located approximately 150 feet to the north or west of the nearest shadow-sensitive uses identified in Table 4.1-2. Based on the location of the APM guideway and its stations to these shadow-sensitive uses, winter shadows between the hours of 9:00 a.m. and 3:00 p.m. would cast to the north and would not extend onto these uses until 2:00 p.m., as shown in Figure 4.1-25. These winter shadows from the APM guideway would continue to extend on shadow-sensitive uses until 3:00 p.m., for a total of 1 hour between the hours of 9:00 a.m. and 3:00 p.m. The APM MSF would be located over 300 feet to the southwest or approximately 140 feet east of the closest shadow-sensitive uses identified in Table 4.1-2. At 9:00 a.m. winter shadows from the APM MSF would partially cast onto the shadow-sensitive use directly to the west. By 12:00 p.m. winter shadows are directed north and are not cast on any nearby shadow-sensitive uses. At 3:00 p.m. winter shadows from the APM MSF would cast onto shadow-sensitive uses to the northeast. However, given the maximum building massing and scale of the proposed APM operating system, shadow-sensitive uses would be shaded for less than three hours between 9:00 a.m. and 3:00 p.m. during the winter solstice, as shown in Figure 4.1-25.

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[23] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, Exhibit A.3-1, "Shadow Length Multipliers and Bearings for 34° Latitude – Los Angeles", p. A.3-5, 2006.

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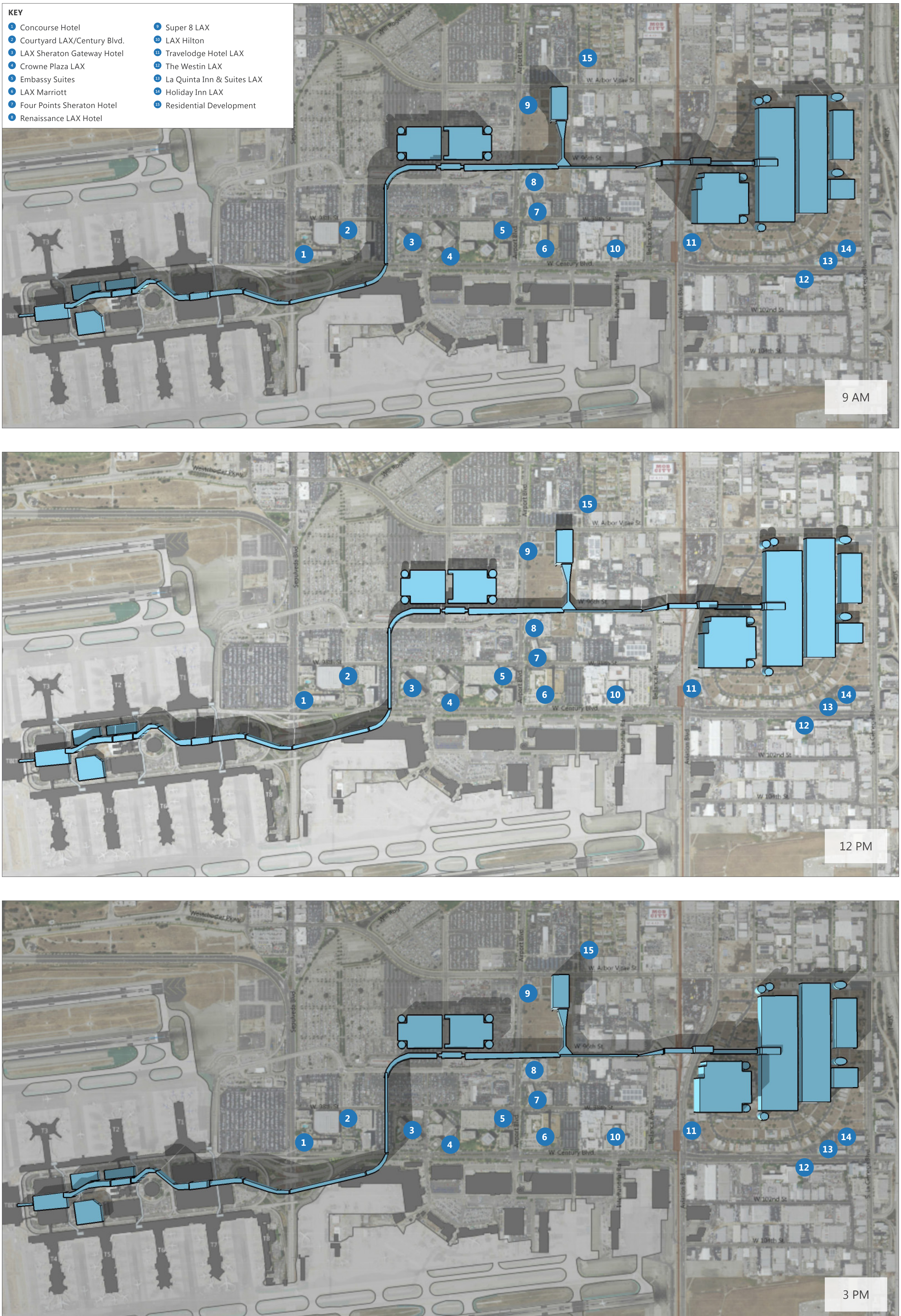

SOURCE: Meridian Consultants, LLC., August 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-25

Proposed Project
Winter Solstice Shadows (9 a.m., 12 p.m., and 3 p.m.)

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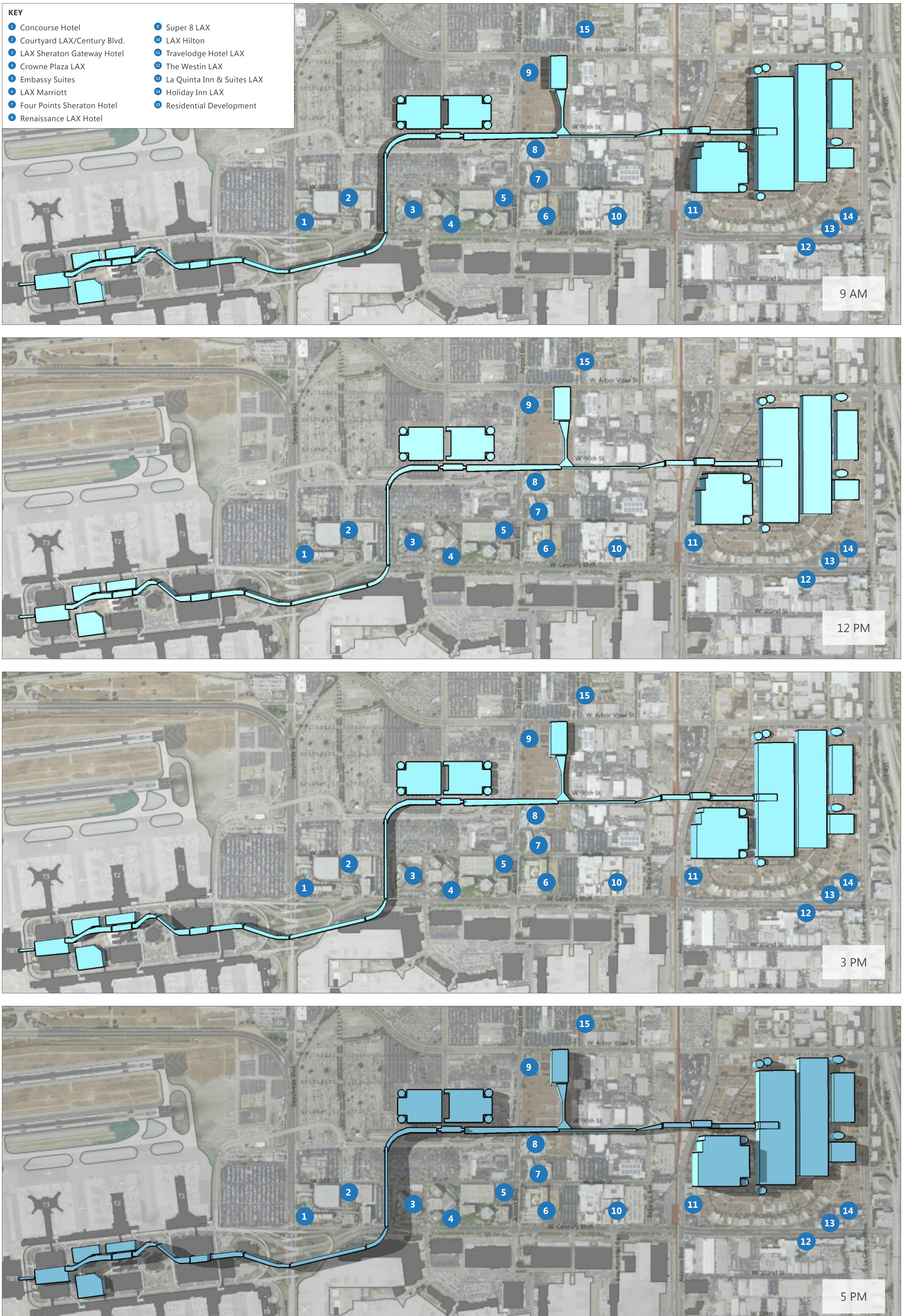

SOURCE: Meridian Consultants, LLC., August 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.1-26

Proposed Project
Summer Solstice Shadows (9 a.m., 12 p.m., 3 p.m., and 5 p.m.)

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As shown in Figure 4.1-26, summer shadows would cast to the west, north, and east of the APM guideway. Between the hours of 9:00 a.m. and 12:00 p.m., summer shadows would cast to the north, but would generally stay within the footprint of the APM guideway. By 1:00 p.m. summer shadows would begin to cast to the east, with summer shadows from the APM guideway casting onto shadow-sensitive uses by 3:00 p.m. These summer shadows from the APM guideway would continue to extend on shadow-sensitive uses until 5:00 p.m., for a total of 2 hours between the hours of 9:00 a.m. and 5:00 p.m. As shown in Figure 4.1-26, summer shadows from the APM MSF would not shade any shadow-sensitive uses between the hours of 9:00 a.m. and 5:00 p.m. Given the maximum building massing and scale of the proposed APM operating system, shadow-sensitive uses would be shaded for less than four hours between 9:00 a.m. and 5:00 p.m. during the summer solstice.

Intermodal Transportation Facilities

As described in Chapter 2, *Description of the Proposed Project*, the proposed Project would include two ITFs: an ITF West and ITF East. Each of the ITFs would consist of an APM station and an adjacent public parking structure(s). The ITF West APM station would have a maximum height of 80 feet above ground level. The west and east parking structures adjacent to the ITF West would have maximum building heights of approximately 50 and 60 feet above ground level, respectively. The ITF East APM Station would have a maximum height of 85 feet above ground level, with the adjacent parking structure at a maximum height of 60 feet above ground level.

At its closest points, the ITF West and ITF East would be located approximately 500 feet to the northwest and 150 feet to the north of the nearest shadow-sensitive uses identified in Table 4.1-2. As shown in Figure 4.1-25, winter shadows of the ITF West and ITF East would cast to the west, north, and east between the hours of 9:00 a.m. and 3:00 p.m. However, given the maximum building massing and scale of the ITF West and ITF East, shadows during the winter solstice would not shade any shadow-sensitive uses.

Between the hours of 9:00 a.m. and 1:00 p.m. summer shadows from the ITF West and ITF East would cast to the west and north, and would generally stay within the building footprints. By 2:00 p.m. summer shadows from the ITF West and ITF East would cast to the east. However, as shown in Figure 4.1-26, these summer shadows would not shade any shadow-sensitive uses. Given the maximum building massing and scale of the ITF West and ITF East, shadows during the summer solstice would not shade any shadow-sensitive uses.

Consolidated Rental Car Facility

As described in Chapter 2, *Description of the Proposed Project*, the CONRAC would have a footprint of approximately 2.1 million sq. ft. with dimensions of 1,800 feet in length (north-south) and approximately 1,400 feet in width (east-west). The CONRAC would consist of various components, such as the Customer Service Building (CSB), Rental Car Ready/Return Parking Area, Quick Turnaround Area (QTA), QTA Support and Additional Site Functions, and Idle Storage. These components would have maximum building heights ranging from 55 to 75 feet above ground level.

At its closest points, the CONRAC would be located approximately 600 feet to the north of the nearest shadow-sensitive uses identified in Table 4.1-2. Between 9:00 a.m. and 12:00 p.m., the majority of the winter shadows would be confined to the Project site, with some shadows casting beyond W. Arbor Vitae Street to the north. By 3:00 p.m. winter shadows would cast to the northeast, but would not extend passed the I-405. As shown in Figure 4.1-25, given the maximum building massing and scale of the CONRAC, shadows during the winter solstice would not shade any shadow-sensitive uses.

Between 9:00 a.m. and 1:00 p.m. summer shadows from the CONRAC would cast to the west and north, and would generally stay within the building footprints. By 2:00 p.m. summer shadows from the CONRAC would cast to the east, but would not extend passed the I-405. As shown in Figure 4.1-26, given the maximum building massing and scale of the CONRAC, shadows during the summer solstice would not shade any shadow-sensitive uses.

Therefore, the proposed Project would not shade any shadow-sensitive uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. PST (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. PDT (between early April and late October). Impacts would be less than significant.

4.1.5.1.3 Light and Glare

Construction

Construction of the proposed Project would involve various demolition, site clearing, grading, and building construction activities. Construction equipment would include, but is not limited to, tractors, backhoes, scrapers, pavers, cranes, and pile drivers. Construction activities associated with the proposed Project would involve nighttime activities that would require lighting of work areas at the construction site themselves within the designated stating areas. Construction-related nighttime lighting would include lights on vehicles, perimeter lighting, and safety lighting. Construction equipment would not include large expanses of mirrors or reflective surfaces that could cause daytime glare impacts; therefore, glare will not be evaluated further in this section.

The nearest light-sensitive uses that would be affected by proposed nighttime construction activities include the residential uses located north of Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue, as well as the hotel buildings along W. Century Boulevard and Airport Boulevard (see Section 4.1.3.4). The majority of these light-sensitive uses are not located within 300 feet of construction staging areas to be affected by any lighting or glare. The light-sensitive uses that would be located adjacent to designated staging areas, and likely to be affected by any new sources of lighting and glare, include the LAX Sheraton Gateway Hotel (Zone 3); the Super 8 LAX (Zone 3); the Renaissance LAX Hotel (Zone 3); the Four Points Sheraton Hotel (Zone 3); the Travelodge Hotel LAX (Zone 4); and the Westin (Zone 4). Additionally, the residential uses to the north would be located approximately 300 feet from the nearest construction staging area, and might be affected by any new sources of lighting or glare associated with construction activities.

Construction of the proposed Project would generate similar sources of light compared to existing conditions and would need to adhere to FAA guidance to avoid causing light impacts or glare to aircraft or air traffic controllers. The Project site is surrounded by various commercial, light industrial, and airport uses generating sources of light typical of a highly developed area. Construction activities within the CTA would primarily occur during the nighttime hours (between 1 a.m. to 9 a.m.). While construction activities outside the CTA would primarily occur during daylight hours (7 a.m. to 3 p.m.), some construction activities would occur during the nighttime (between the hours of 3 p.m. and 11 p.m.). However, construction activities would incorporate various buffer mechanisms, such as screened chain link fencing, existing vegetation features, or setbacks within each designated staging area, to shield any nighttime light from spilling over onto surrounding uses. All construction activities would follow standard construction practices identified by the Design and Construction Handbook (i.e., ensure lighting is shielded and focused downward and established a schedule to use lighting only when required) to minimize the spillover of light off the Project site and onto adjacent light-sensitive uses. Construction activities would also be required to comply with LAMC Section 93.0117 by prohibiting the illuminance of more than two footcandles of lighting intensity or generation of direct glare on light sources. Additionally, construction activities would comply with LAMC Section 12.50 to avoid hazards to aircrafts by limiting illumination within construction staging areas that fall within an airport hazard area. Adherence to these standard construction practices and regulatory standards would assure that light and glare impacts that may occur during construction of the proposed Project would be less than significant because lighting intensity would not increase by more than 2 foot-candles as measured at the property line of a residential property, and because the proposed Project would not create a substantial new source of glare or a change in the built environment that would adversely affect day or nighttime views in adjacent areas sensitive to glare.

Operations

The proposed Project would result in the introduction of new structures to the Project site, including an elevated APM guideway, APM stations, an APM MSF, APM traction power substations, ITFs, a CONRAC, roadway improvements, and other airport amenities, such as dining and concession services, baggage check facilities, and ticketing/information kiosks. These new uses would contribute new sources of lighting typical of a modern airport transportation area, which currently contains moderate to high levels of ambient lighting.

The proposed Project would replace various existing commercial, industrial, and surface parking lots across the Project site to accommodate the APM guideway, ITFs, and CONRAC. While the proposed Project would introduce new sources of lighting, particularly within the predominantly vacant Manchester Square and Belford areas, these introduced sources of lighting would be typical of parking structures and terminal-like facilities; similar to the character of existing uses within Project area.

The proposed Project would incorporate adequate nighttime lighting throughout all of its components to ensure a safe and accessible environment for passengers. These sources of nighttime lighting include, but are not limited to, poles and fixtures along the APM guideway, building entrance and walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. Various forms of wayfinding nighttime lighting would also be provided for safe pedestrian passage and property identification, as well as to direct ground transportation circulation. Other sources of lighting would be associated with ground transportation, such as private vehicles, buses, and shuttles that would circulate from the CONRAC and ITFs.

The nearest light-sensitive uses that would be affected by these new sources of lighting and glare include the residential uses located north of Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue, as well as the hotel buildings along W. Century Boulevard and Airport Boulevard. However, similar to other development on LAX property, all lighting associated with the Project components would be shielded and directed downward to minimize light spillover to not extend beyond structures. The shielding and focusing of lighting sources would also minimize any adverse glare effects. In accordance with the LAX Design Guidelines, the proposed Project would incorporate various features throughout the new facilities, such as screening, street trees, landscape buffer zones, and other appropriate mechanisms to minimize lighting spillover. The proposed Project would also utilize low-reflective materials to minimize any introduced sources of daytime or nighttime glare within the area. The incorporation of these design features would ensure that light spillover and adverse glare impacts from the proposed Project components on these light-sensitive uses would be minimized. Coordination of these structures with FAA would occur during design to ensure that they do not pose any hazard to aircraft or air traffic controllers.

Furthermore, the proposed Project would comply with the LAX Design Guidelines, the Century Boulevard Streetscape Plan, and the Westchester–Playa del Rey Community Plan by incorporating site lighting elements and other building materials that would contribute to a safe and inviting atmosphere without casting light into the night sky or adjacent properties. The LAX Design Guidelines, the Century Boulevard Streetscape Plan, and the Westchester–Playa del Rey Community Plan provide a framework for the incorporation of wall, fencing, and landscaping features to confine lighting and minimize light spillover onto surrounding uses. The proposed Project would also comply with LAMC Section 93.0117 by prohibiting the illuminance of more than two footcandles of lighting intensity or generation of direct glare on light sources. Additionally, the operational sources of light and glare associated with the proposed Project would comply with LAMC Section 12.50 to avoid hazards to aircrafts by limiting illumination within portions of the Project site that fall within an airport hazard area. Adherence to these regulatory standards would reduce any light and glare impacts that may occur during operations of the proposed Project. Adherence to these regulatory standards would ensure that light and glare impacts during operation of the proposed Project would be less than significant because lighting intensity would not increase by more than 2 foot-candles as measured at the property line of a residential property, and because the proposed Project would not create a substantial new source of glare or a change in the built environment that would adversely affect day or nighttime views in adjacent areas sensitive to glare.

4.1.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The potential future related development of parcels that would be utilized for construction laydown and staging areas could occur after construction of Phase 1 of the proposed Project. The parcels proposed for potential future related development are located adjacent to the CONRAC, the ITF East, the APM MSF, and the ITF West (see Figure 2-51). While there are no specific plans for development of these parcels at this time, the development of these parcels could accommodate up to 900,000 square feet of commercial development; with. 450,000 sq. ft. located within the CONRAC area and the other 450,000 sq. ft. located south of the ITF West and west of the APM MSF.

The development of individual future related projects would undergo similar construction activities compared to existing construction activities currently within the Project area, which would not affect the visual character of the area. While the future related development would alter the visual character of the vacant parcels, this proposed development would introduce commercial uses, similar uses to what currently exists within the Project area, which would be compatible with the visual character of the surrounding highly developed area. As the parcels proposed for the potential future related development would be vacant prior to construction, the removal of visual resources that contribute to a valued aesthetic character would not occur. The potential future related development would provide airport-related support uses and commercial development that would complement the surrounding airport uses. The potential future related development would also comply with the LAX Design Guidelines to incorporate aesthetic elements and landscaping features that would be consistent with surrounding airport uses; thus, contributing toward the function of a transportation-oriented environment near the Airport.

At this time, there are no specific plans for development of the proposed newly created parcels. Land use designations and design guidelines have been developed to guide the future development of these parcels. As discussed in Section 4.8, *Land Use and Planning,* the parcels proposed for the potential future related development would consist of similar commercial and airport-related support uses within the highly developed area by providing services to support the needs for airport travelers. The maximum height and floor area ratio (FAR) for these areas would be consistent with the LAX Specific Plan, updated as part of the proposed Project (see **Appendix D**).

As individual development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary, to determine visual character, shading, and light and glare impacts. Developers of all potential future related development would be required to comply with all LAMC requirements as well as the LAX Design Guidelines for heights, density, and building setbacks to ensure aesthetic compatibility with surrounding uses. Developers would also be required to comply with the Century Boulevard Streetscape Plan, if adopted by Department of City Planning, or the Westchester–Playa del Rey Community Plan for those parcels located in these respective plans. Adherence to the LAMC, Design Guidelines, the Century Boulevard Streetscape Plan, and the Westchester–Playa del Rey Community Plan would reduce any impacts related to light and glare impacts on surrounding sensitive uses. The future related development would also comply with FAA height restrictions and would not interfere with Airport operations.

Therefore, the potential future related development would not result in visual impacts related to (1) the introduction of features that would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.); (2) the removal of one or more features that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area such as demolition of structures or removal of street trees, a stand of trees, or other landscape features that contribute positively to the valued visual image of a community; or (3) the obstruction, interruption, or diminishment a valued focal or panoramic view from any designated scenic highway, corridor, or parkway. Impacts would be less than significant.

The potential future related development would not result in shading impacts related to the shading of shadow-sensitive uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. PST (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. PDT (between early April and late October). Impacts would be less than significant.

Lastly, the potential future related development would not result in light and glare impacts related to (1) a change in lighting or lighting intensity such that light would spill off the project site and affect light-sensitive areas; or (2) a substantial new source of glare, or a change in the built environment, which would adversely affect day or nighttime views in adjacent areas sensitive to glare. Impacts would be less than significant.

4.1.6 CUMULATIVE IMPACTS

As discussed in Section 4.1.5, the proposed Project would result in a significant impact on visual character, but a less than significant impact on shading and light and glare. As identified in Section 3.4 in Chapter 3, *Overview of Project Setting*, a number of ongoing and future projects are planned within the immediate area of the proposed Project, including the Airport Metro Connector Station, which would be located adjacent to the ITF East to provide a connection for passengers traveling to LAX. Cumulative development would be of a similar visual character to the existing airport and commercial uses within the Project area and is not anticipated to introduce new aesthetic elements that would be out of scale or character with the existing visual environment. Cumulatively these projects would result in short-term visual impacts throughout construction activities. Many projects would be subject to FAA review and approval to ensure they are not incompatible with airport operations. The proposed Project, in combination with cumulative projects, would result in a less than significant cumulative impact related to (1) the removal of one or more features that contribute to the valued aesthetic character or image of the neighborhood, community, or localized area such as demolition of structures or removal of street trees, a stand of trees, or other landscape features that contribute positively to the valued visual image of a community; or (2) the obstruction, interruption, or diminishment a valued focal or panoramic view from any designated scenic highway, corridor, or parkway. However, the proposed Project, in combination with cumulative projects, would result in a significant cumulative impact related to the introduction of features within the CTA that would detract from the existing valued aesthetic quality of the Theme Building by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.) or cause an inconsistency with applicable design guidelines; and the proposed Project's contribution would be cumulatively considerable.

Cumulative shading impacts could occur when shading from past, present, and reasonably foreseeable probable future projects in combination with shading created by the proposed Project would result in the overlap of shadow on shadow-sensitive uses. As previously identified, sensitive uses within proximity to the Project area include the residential uses located north of Westchester Parkway/W. Arbor Vitae Street between S. Sepulveda Boulevard and Bellanca Avenue and the hotel buildings along W. Century Boulevard and Airport Boulevard. Given the location of these sensitive uses to the future development within the Project area, the proposed Project in combination with cumulative projects would not result in shading impacts related to the shading of shadow-sensitive uses for more than three hours between the hours of 9:00 a.m. and 3:00 p.m. PST (between late October and early April), or for more than four hours between the hours of 9:00 a.m. and 5:00 p.m. PDT (between early April and late October). Impacts would be less than significant.

Development of the proposed Project in combination with past, present, and reasonably foreseeable probable future projects would introduce new or expanded sources of lighting and glare that could contribute to increased nighttime lighting level as experienced by off-site sensitive uses. As previously described, the Project area is high developed with a range of low to high ambient nighttime light levels, consistent with an urbanized area. These introduced sources of lighting within the Project area would not substantially alter the existing ambient lighting environment, nor would the future projects use highly reflective materials that would result in glare impacts. All future projects would comply with applicable design guidelines and regulations, to minimize the spillover of light off the Project site and onto adjacent light-sensitive uses. As such, the potential future related development would not result in light and glare impacts related to (1) a change in lighting or lighting intensity such that light would spill off the project site and affect light-sensitive areas; or (2) a substantial new source of glare, or a change in the built environment, which would adversely affect day or nighttime views in adjacent areas sensitive to glare. Impacts would be less than significant.

4.1.7 MITIGATION MEASURES

As indicated in Section 4.1.5, Project-related impacts on the Theme Building visual character would be significant. The following mitigation measure is proposed to reduce significant visual impacts.

- **MM-A (LAMP)-1. Application of Design Features to Protect Aesthetic Context of Theme Building.** LAWA shall apply the following guidelines to the final design of the APM guideway and passenger walkway adjacent to the Theme Building to reduce visual impacts:
  - Minimize the number of columns and structures surrounding the Theme Building by maximizing the column support span in this area.
  - Minimize the bulk of the APM guideway structure to preserve openness around the Theme Building to the extent feasible.
  - Design the APM and passenger walkway structures around the Theme Building to complement the existing Theme Building structure and better harmonize the Project elements and the Theme Building.
  - Implement landscape elements in the vicinity of the Theme Building that enhance passenger and visitor's visual focus on the Theme Building (i.e., make the Theme Building the visual focus of this area, not the proposed Project elements).

Impacts of the potential future related development would be less than significant; therefore, no mitigation measures are required.

4.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

While application of Mitigation Measure MM-A (LAMP)-1 would lessen the visual impact of the APM guideway to the Theme Building, the visual impact of the APM guideway and passenger walkways to the Theme Building would remain significant because it would introduce features that would detract from the existing valued aesthetic quality of a neighborhood, community, or localized area by conflicting/contrasting with important aesthetic elements or the quality of the area (such as a theme, style, setbacks, density, massing, etc.). There are no other feasible measures available to reduce impacts to visual character further. Therefore, Project-related impacts to visual character would be significant and unavoidable. Impacts of the potential future related development would be less than significant.

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4.2.2 HUMAN HEALTH RISK ASSESSMENT

4.2.2.1 Introduction

As discussed in Chapter 2, *Description of the Proposed Project*, the proposed Project would relieve traffic congestion within the Central Terminal Area (CTA) and on the surrounding street network, improve access options and the travel experience for passengers, and provide connection to the Metro rail system. Such changes would result in alterations to the amounts of toxic air contaminants (TAC) released by vehicles and stationary sources. TAC would also be released during construction. Differences in TAC releases from construction activities and operations 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 and operations associated with the proposed Project. The HHRA and health impact analysis disclose whether the proposed Project would increase 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 is anticipated to take approximately 14 years, starting in late 2017 and with most elements completed by 2030; some portions of the Project including the potential future related development may extend through to 2035. For purposes of this analysis, to be conservative, it was assumed that all construction would be completed by 2030. Based on current construction phasing plans, the bulk of the construction activities that would increase TAC emissions (i.e., demolition and regrading) would occur within the first 5 years of construction, although construction activities are expected to span the entire 14-year period. Operation of the first completed components of the proposed Project (e.g., APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements) is anticipated to start in 2024. Although the remaining components of the proposed Project (mainly roadway improvements) are anticipated to be completed by 2030 (i.e., end of construction), the analysis of the future condition is for 2035.

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. Further, completion of construction projects results in changes to emissions during typical airport operations, because such projects are designed to make operations more efficient and hence less polluting. Finally, emissions from all sources will change with time and by location. Regional sources are subject to efforts to improve air quality in the Los Angeles 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. These complexities require an approach that examines incremental impacts to air quality.

Incremental risks are assessed in three ways for this assessment:

- A baseline for air quality in LAX environs was established for operations in 2015. This baseline, represents incremental impacts to air quality for airport operations in the absence of the proposed Project. This baseline is the threshold against which predicted effects of Project construction are compared.
- Changes to operations associated with completion of the proposed Project was also separately established. After construction is complete, predicted changes to operational impacts were compared to 2015 baseline to judge the long-term impact of the proposed Project.
- Construction emissions were estimated using construction schedules prepared for staging the project. Construction is not part of typical operations. Thus, prior to ground breaking on the proposed Project, construction emissions are zero. As construction goes on, emissions associated with this activity add incrementally to total airport emissions, and contribute fractionally to TAC in air from non-airport sources.

No investigation or modeling of non-airport sources, the fourth source of TAC in air at and near LAX was conducted. California EPA 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.

The separate analyses described allow multiple comparisons of air quality impacts to assess possible health impacts:

- Comparison of air quality impact for baseline 2015 conditions with regional air quality from MATES IV provides an estimate of incremental contributions of current LAX operations.
- Comparison of air quality impacts for baseline 2015 conditions to operational emissions after completion of the proposed Project provides a measure of how Project completion affects operational emissions.
- Comparison of air quality impacts for baseline 2015 conditions with estimated impacts of construction emissions provides a measure of the increment to total impacts during the period of construction.
- Comparison of regional air quality as measured in the MATES IV study with construction and operational 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 human health risk assessment (HHRA) in detail. **Appendix F** provides further details.

4.2.2.1.1 Pollutants of Interest

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

In addition to TAC emissions, as discussed in Section 4.2.1.6, the proposed Project (including potential future related development) would lead to significant increases in mass emissions of criteria pollutants, Proven scientific methods are not available to correlate these increases in criteria pollutant mass emissions to project-specific health impacts on specific sensitive receptors.

However, SCAQMD developed the local significance thresholds listed in Table 4.2.1-6 to represent the maximum emissions from a project that would not cause or contribute to exceedance of federal or state ambient air quality standards, which in turn were developed to protect public health. As discussed in Section 4.2.1.6, construction and operation of the proposed Project, including potential future related development, would exceed localized concentration thresholds for PM_{10}. The health risks of particulate concentrations in general have been taken into consideration by the ARB and USEPA in complex health risk assessments used to establish the CAAQS and NAAQS. By definition, persons exposed to exceedances of these ambient standards are at risk of the adverse health impacts of PM_{10} described in Section 4.2.1.1.4. Given the limitations of the localized particulate dispersion modeling, it is not possible to directly and accurately correlate potential increases in PM_{10} standards violations to project-specific health impacts (e.g., number of cases of decreased lung function).

4.2.2.1.2 Scope of Analysis

The HHRA conducted for the proposed Project addresses construction-related and operational-related emissions. Cancer risks as well as chronic and acute non-cancer health hazard assessments all depend on estimating TAC concentrations in air. These concentrations are used to estimate the amount of TAC that people living, working or going to school near LAX might inhale over both short (acute) and long (chronic) time frames.

Estimated emission rates were used, along with meteorological and geographic information, as inputs to an air dispersion model. The dispersion model predicted possible concentrations of TAC released during proposed Project construction and operations 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 4.2.1.2 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 emissions profiles to speciate total VOC and PM_{10} estimates into individual elements and compounds (specie). 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 this total, the concentration of that TAC at that location would be 0.001 $\mu g/m^3$.

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

- Construction-related TAC emissions were modeled for each year of construction using the schedule for proposed Project construction activities and anticipated 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.
- Proposed Project operations were modeled for conditions in 2024 and in 2035. These cutoff years are based on construction completion and startup of the APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements in 2024 and 2035 when all components of proposed Project are expected to be in operation.
- Baseline conditions were modeled using data collected for operations during 2015 and assumptions concerning emissions rates from aircraft, vehicles and stationary sources. This information is the best current information on which to estimate baseline conditions.
- Proposed Project annual concentrations between 2024 and 2035 were linearly interpolated, and concentrations after 2035 were assumed to be the same as 2035. California EPA guidance requires that impacts to health be evaluated for 30-year exposure duration. Project construction is scheduled to begin in late 2017, meaning that the HHRA for cancer risks should cover a time period to 2046.

Short-term (1-hour and 8-hour) concentrations and annual average concentrations for baseline conditions[2] were subtracted from short-term concentrations and annual average concentrations for the proposed Project, respectively, to estimate incremental project-related impacts. Incremental short-term 1-hour concentrations were then used to estimate acute non-cancer health hazard impacts, and incremental annual average concentrations were used to estimate cancer risk and chronic non-cancer health hazards using methods described in Appendix F.

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1 AERMOD was developed by USEPA specifically for the estimation of concentrations of airborne chemicals released from point, mobile and/or area sources.

2 Operational baseline conditions for significance are Future Without Project conditions. Construction baseline conditions are essentially zero – no construction would occur without the proposed Project; therefore, construction increments were modeled directly without subtracting any baseline. A comparison to existing (2015) conditions is presented for disclosure purposes.

This approach allows for incremental impacts to be either positive (adverse) or negative (beneficial). For example, if emissions following completion of the Project are reduced due to factors such as replacement of diesel-fueled equipment, better traffic patterns, and cleaner burning fuels and engines, incremental impacts would be negative – that is, air quality would improve.

4.2.2.1.3 Exposure Concentrations

TAC concentrations were estimated at dozens 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.

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.[3] 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 built into an Excel spreadsheet to allow for customization of the calculations to address Project-specific criteria and for the ease of conducting multiple iterations of calculations. HARP2 equations are described in detail in Appendix F.

4.2.2.1.4 Overview of Risk Assessment

This HHRA is based on estimates for construction and operational TAC emissions associated with the proposed Project. Baseline construction emissions are assumed to be zero; that is, no other on-Airport construction is assumed while the proposed Project is constructed. Incremental impacts of construction are therefore additive to impacts due to operations as defined by 2015 baseline conditions. Cumulative impacts, including possible impacts of airport and non-airport related construction, are discussed separately.

Emissions sources during construction were analyzed for each construction year from 2017 through 2030. Operational emissions were analyzed for 2024 and 2035 with and without the proposed Project, as well as for 2015 baseline conditions in order to determine the incremental impact. Year 2024 was chosen as the first year in which proposed Project changes to airport operations would be realized. Year 2035 is the last year for which operations projections are available.

The HHRA followed State and, as necessary, federal guidance[4] for performance of risk assessments and was conducted in four steps described above as defined in South Coast Air Quality Management District

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3 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.

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

(SCAQMD), CalEPA, and United States Environmental Protection Agency (USEPA) guidance[5,6,7] consisting of selection of TAC of concern, exposure assessment, toxicity assessment, and risk characterization. These steps are summarized below. Details of the risk assessment methodology are provided in Appendix F.

Selection of TAC of Concern

In general, TAC of concern for the HHRA are based on TAC identified under California 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. 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.

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. 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 4.2.2-1**.

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, off-Airport child residents, and off-Airport school children. 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.

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5 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.

6 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; 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; 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; 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; 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.

7 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.

[Draft]

Table 4.2.2-1: 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

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith., September 2016.

The EIR's approach to assessing health risks is protective of all receptors. The range of risks and hazards for areas surrounding LAX thus provide information to the community concerning impacts at locations where they live, work 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, school children) 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 airport–related TAC. Note that, based on the 2015 OEHHA Guidance methodology for calculating chronic non-cancer hazard indices, the hazard calculation for school children would not be different than the calculation for child residents. Thus, chronic non-cancer hazard indices were not calculated separately for school children. Separate calculations were included only for cancer risks for school children.

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[8] (see LAX Master Plan Final EIR Technical Report 14a and Technical Report S-9a).[9] 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.

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8 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), April 2004.

9 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), April 2004

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 4.2.2-1. To maintain consistency with regulatory guidance, toxicity information from previous HHRA efforts were updated from 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 risk assessments.

Acute RELs developed by the State of California were used in the characterization of acute non-cancer health hazards associated with the proposed Project. 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[10] were used to characterize cancer risks and chronic non-cancer health hazards associated with longer-term inhalation of emissions from construction and 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 F.

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[11] 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.

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10 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals.

11 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.

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; a 12-year period for off-site school children; 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 2030. 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, and incremental cancer risks for the years following construction were calculated using TAC concentrations from emissions from operations. For the period from 2024 through 2030, TAC concentrations from emissions from operations were added to the TAC concentrations from emissions from construction for all years after the 2024 horizon year when operations of the first completed components of the proposed Project (e.g., APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements) were assumed to commence. After construction is projected to be completed (the period from 2031 to 2035), incremental cancer risks were calculated using TAC concentrations from emissions from only operations. For exposure periods that extend beyond 30 years, 2035 horizon year TAC concentrations were used for post-2035 exposure years.

TAC concentrations for operations were modeled for two horizon years – 2024 and 2035. For calculation of cancer risks for horizon year 2024, TAC concentrations were assumed to decrease linearly for 11 years from the 2024 horizon year to the 2035 horizon year and then remain constant at the 2035 TAC concentrations for the remainder of the exposure period. This is a conservative assumption because reduced emissions from fleet turnover to newer vehicles and the use of reformulated gasoline as well as the implementation of state and local regulations and programs targeted to mitigate emissions are likely to result in decreases in future emissions past 2035.

Combined construction and operational impacts were calculated as the sum of impacts for four exposure periods. Only construction impacts were assessed for the first 7 years of the project (2017 through 2024). For the next 7 years (2024 through 2030), construction and operational impacts were summed, using the appropriate years of the linear extrapolation between years 2024 and 2035 to evaluate operations, Between 2030 and 2035, only operational impacts are assessed, again using the appropriate years of the linear extrapolation between years 2024 and 2035. Finally, from 2035 on, operations only are included based on estimated 2035 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 estimates exaggerate risks for most people living, working, 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 4.2.1, *Air Quality*). 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-worker TAC concentrations for operational emissions. For off-Airport locations, land uses were designated as either residential, commercial, 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 and school children 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 **Figures 4.2.2-1** and **4.2.2-2**.

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 4.2.1, *Air Quality*. 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, live, or attend school 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. An increased incremental cancer risk greater than, or equal to, 10 in one million (10×10^{-6}) for potentially exposed off-site workers, residents, or school children was considered a significant impact. Cancer risks were based on an exposure duration of 30 years. 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.

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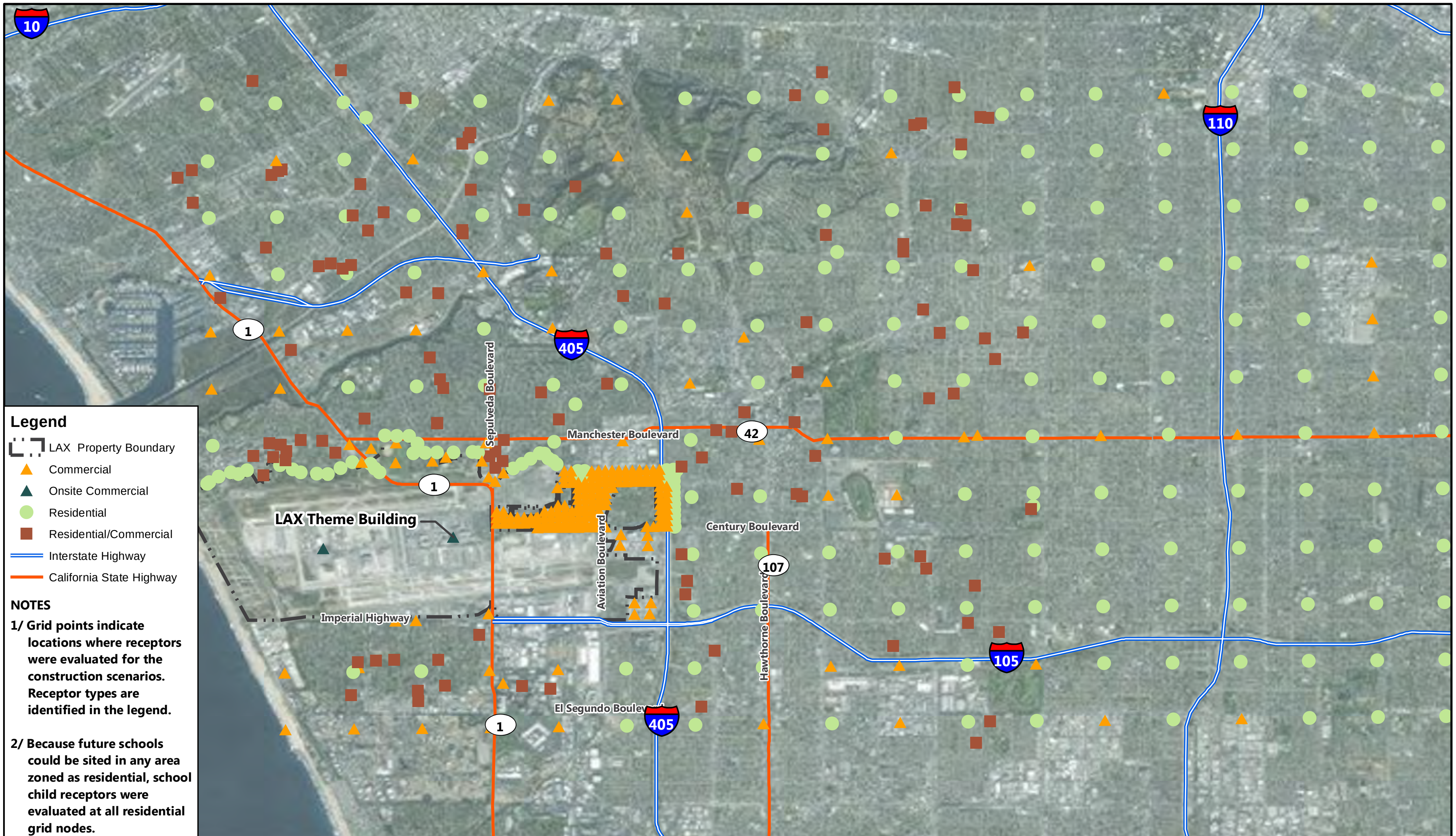

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-1

0 2
Miles

Construction Grid Point Locations

[Draft]

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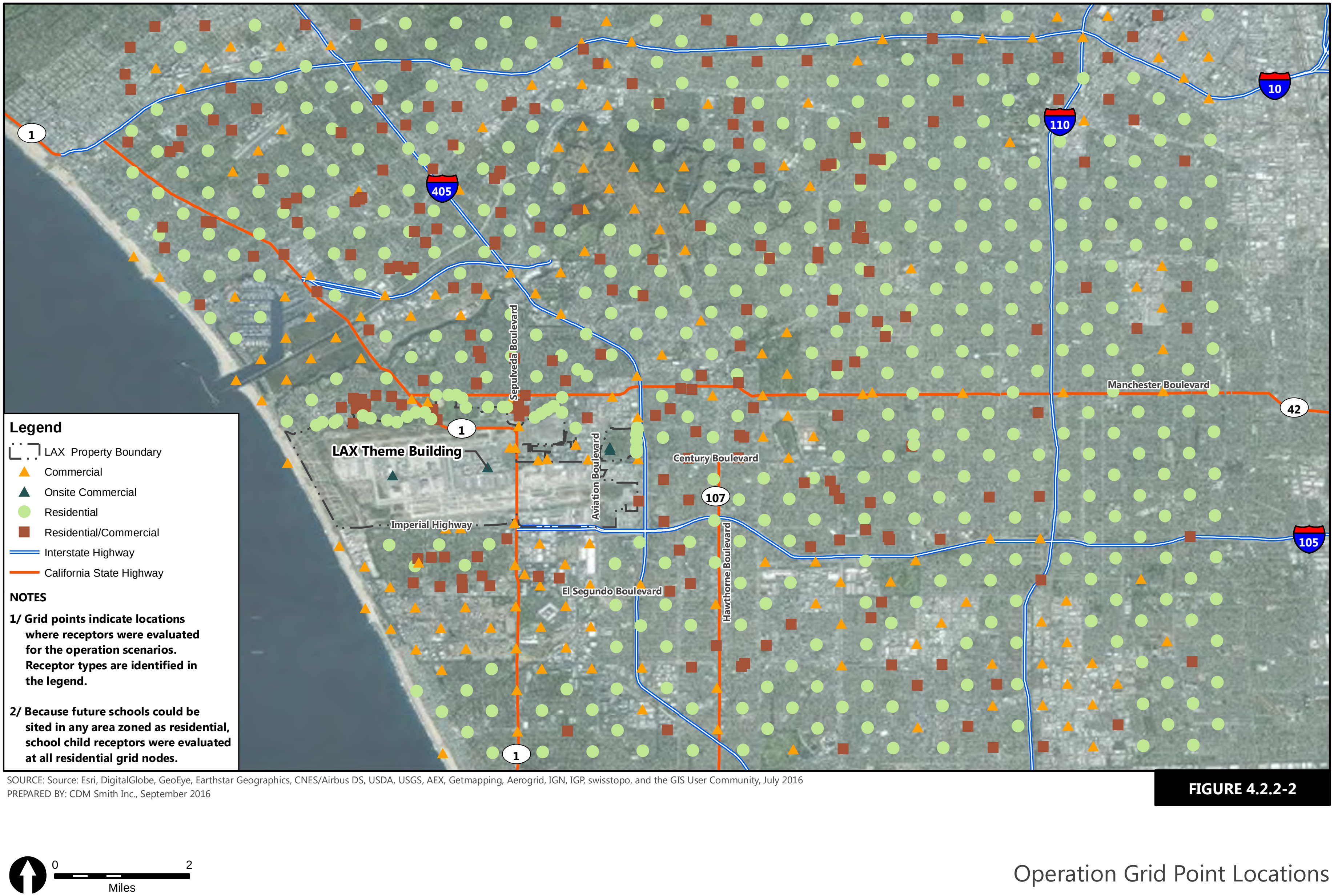

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-2

Operation Grid Point Locations

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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).[12]

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 airport emissions, the chance of a single case of cancer in this population caused by airport emissions would be 1 in 100 (100,000 times 10 x 10^{-6}).

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[12] 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.

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 was exposed to the emissions for a lifetime (70 years).

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 parameter assumptions, toxicity assessment, use of 2015 OEHHA Air Toxics Methodology[13] instead of Risk Assessment Guidance for Superfund (RAGS)[14] methodology, and interactions among acrolein and

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13 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.

14 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.

criteria pollutants. Detailed discussions of these uncertainties associated with the HHRA are presented in Appendix F. 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.

4.2.2.2 Existing Conditions

4.2.2.2.1 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 0 and Tier 1) began on March 1, 2009; however, CARB is not enforcing this part of the regulation until "it receives authorization from USEPA."[15] Implementation of the fleet averaging emission standards is staggered based on fleet size, with the largest operators to begin compliance in 2015.[16] 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.[17]

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.

4.2.2.2.2 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

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15 State of California, Office of Administrative Law, "California Regulatory Notice Register, February 26, 2010," Available: http://www.oal.ca.gov/res/docs/pdf/notice/9z-2010.pdf, accessed November 2013.

16 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 2013.

17 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.

several times; the most recent study, MATES-IV,[18] 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.

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.[19] 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

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18 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.

19 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.

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.[20]

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 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 4.2.1, *Air Quality*). 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.

4.2.2.3 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[21] incremental impact to human health would occur if changes in operations following implementation of the proposed Project would result in one or more of the following conditions:

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20 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 9, 2014.

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

- An increased incremental cancer risk[22] greater than, or equal to, 10 in one million (10×10^{-6}) for potentially exposed off-site workers, residents, or school children.
- 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[23] 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.[24] Thresholds for workers are based on standards developed by CalOSHA.

4.2.2.4 Impact Analysis

4.2.2.4.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project including the potential future related development. Because the HHRA is a study of long-term exposure and risks to human health, all components of the proposed Project including future potential related development were analyzed together. Air concentrations for TAC for construction and operational sources 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, school children, and off-airport workers at locations where air concentrations for TAC were predicted. Appendix F provides detailed health risk modeling data supporting the impact analyses.

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

23 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.

24 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 3, 2016.

Construction

For the construction scenario, 550 grid points were analyzed within the study area in the vicinity of the Airport for each construction year from 2017 to 2030. These locations are shown on Figure 4.2.2-1. In addition, risks and hazards for operations were added to the construction risks and hazards, for construction years 2024 to 2030.

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, commercial, and student receptors. These calculations assumed that people live, work, and go to school 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, go to school and participate in other activities outside of the study area.

Cancer Risks

Peak construction-related cancer risks for MEI are presented in **Table 4.2.2-2** and summarized in the following sections; calculations are presented in Appendix F. As shown, unmitigated construction-related cancer risks would be significant for adult and child residents, and school children.

Table 4.2.2-2: 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	**23**	10	**Yes**
Child Resident, 9 years	**54**	10	**Yes**
School Child, 12 years	**13**	10	**Yes**
Adult Worker, 25 years	3	10	No

SOURCE: CDM Smith, July 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Residents (Adult and Child)

For construction-related cancer risks, adult and child residents were evaluated at 333 residential and residential/commercial grid nodes[25]. Because construction of the proposed Project is estimated to be 14 years, incremental cancer risk for adult residents was estimated assuming 14 years of construction and with operation overlapping the construction starting in 2024; following completion of construction, it was assumed that adult residents were exposed to operations for the remaining 16 years of the 30-year exposure period.

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

Since the exposure period for a child resident is 9 years, which is less than the 14-year construction scenario, the cancer risk for child residents was calculated over several periods within the 14-year time frame to determine which period would result in the maximum cancer risk for the child resident. It was determined that the maximum cancer risk for a child resident would occur for the 9-year exposure period from 2019 to 2027 for the unmitigated construction scenario.

Incremental cancer risk for an adult resident at the peak location during construction is estimated to be 23 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (94 percent) followed by hexavalent chromium, contributing 4 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 4.2.2-3**.

Incremental cancer risk for a child resident at the peak location during construction is estimated to be 54 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (91 percent) followed by hexavalent chromium, contributing 6 percent. The peak cancer risk location for child residents is shown on **Figure 4.2.2-4**.

School Child

Receptor locations for school children were conservatively evaluated at all 333 residential and residential/commercial locations assuming that schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations, and school sites must meet LAUSD criteria before a public school can be established. However, evaluating all possible locations within the study area that might be used for schools in the future is well beyond the scope of this assessment. As calculated, the assessment will provide risk information for the future should school sites within the study area be considered.

For construction-related cancer risks, school children were evaluated for a 12-year exposure scenario. Because construction of the project is estimated to be 14 years, incremental cancer risk for the school child was estimated assuming 12 years of construction, with years of operation overlapping the construction starting in 2024. Calculations indicated that the peak 12-year exposure period for the school child was 2019 to 2030.

Incremental cancer risks for children attending schools at the peak location were estimated to be 13 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (88 percent) followed by hexavalent chromium, contributing 9 percent. The peak cancer risk location is shown on **Figure 4.2.2-5**.

Grid locations that were evaluated include all residential or residential/commercial locations s because schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations. The closest existing school with peak cancer risks would be Oak Street Elementary School. During the construction period, peak cancer risks at the existing Oak Street Elementary School are estimated to be 8 in one million, below the threshold of significance of 10 in one million. The location of Oak Street Elementary School is shown on Figure 4.2.2-5. Since the school is an elementary school that provides instruction for children from kindergarten through sixth grade (i.e., 7 years), actual exposure for the school child would be less than the 12-year exposure scenario that was modeled.

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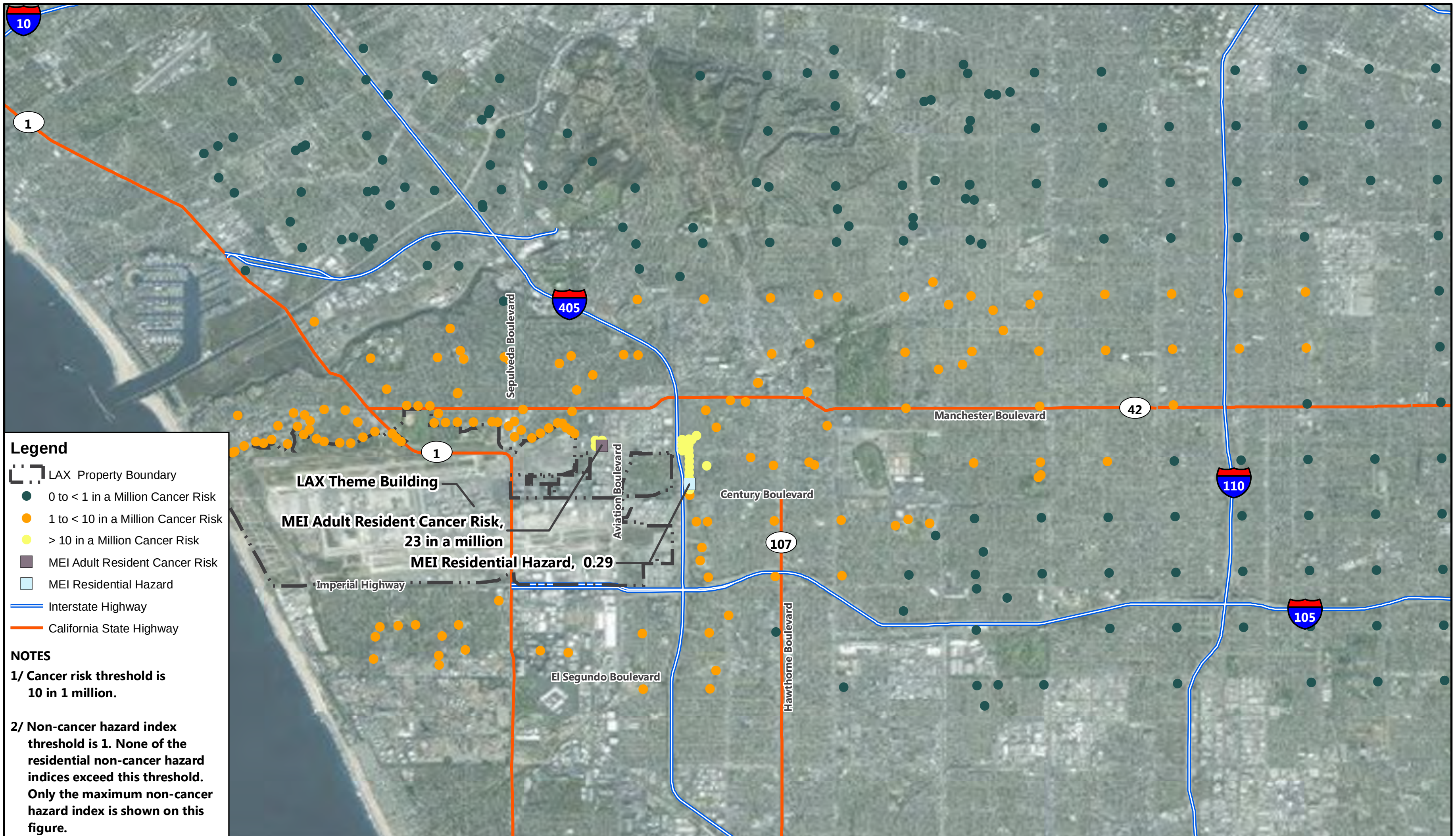

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-3

0 9,000
Feet

Construction Unmitigated –
30-year Adult Residential Incremental Cancer Risk

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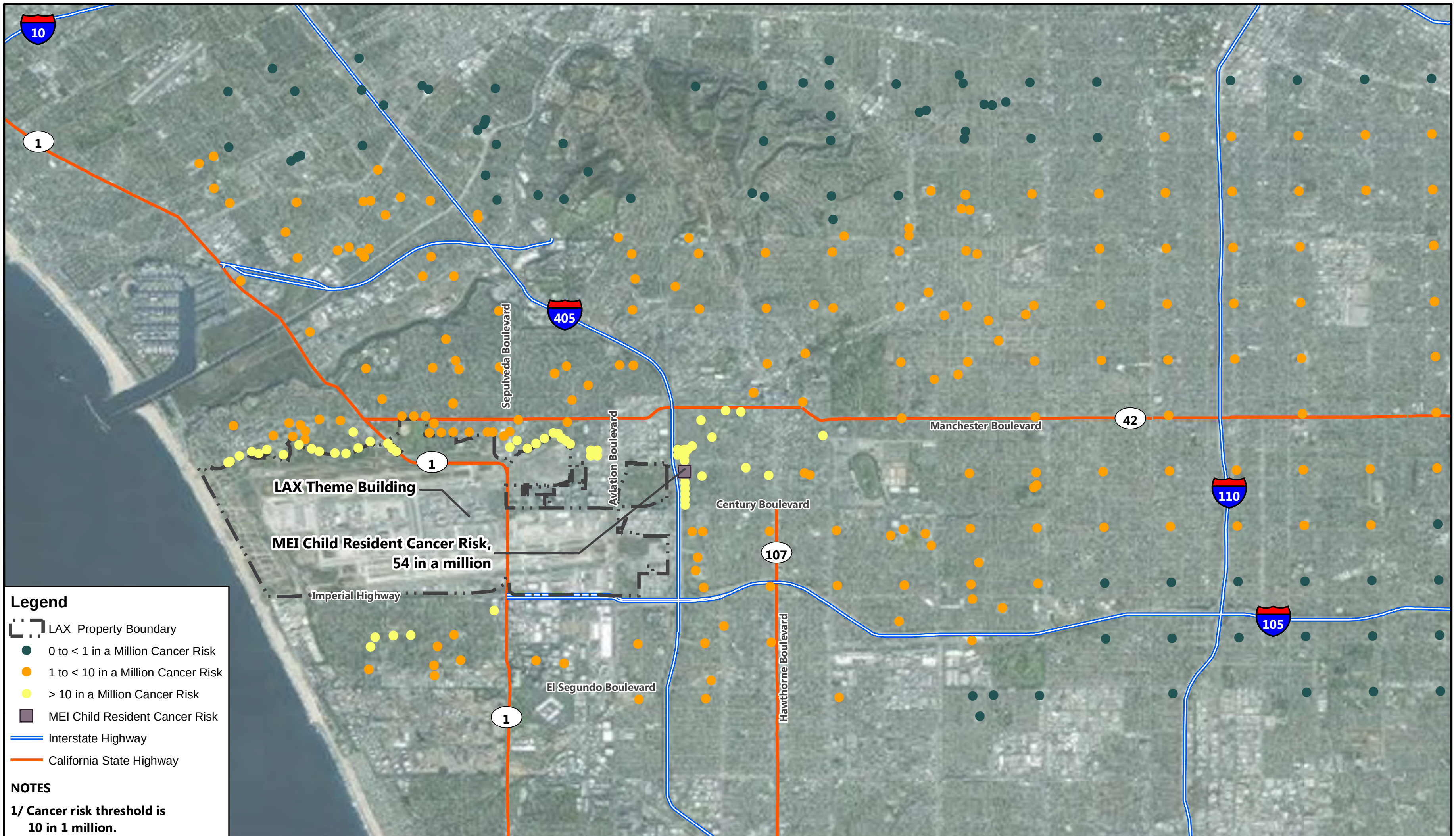

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-4

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Construction Unmitigated –
9-year Child Residential Incremental Cancer Risk

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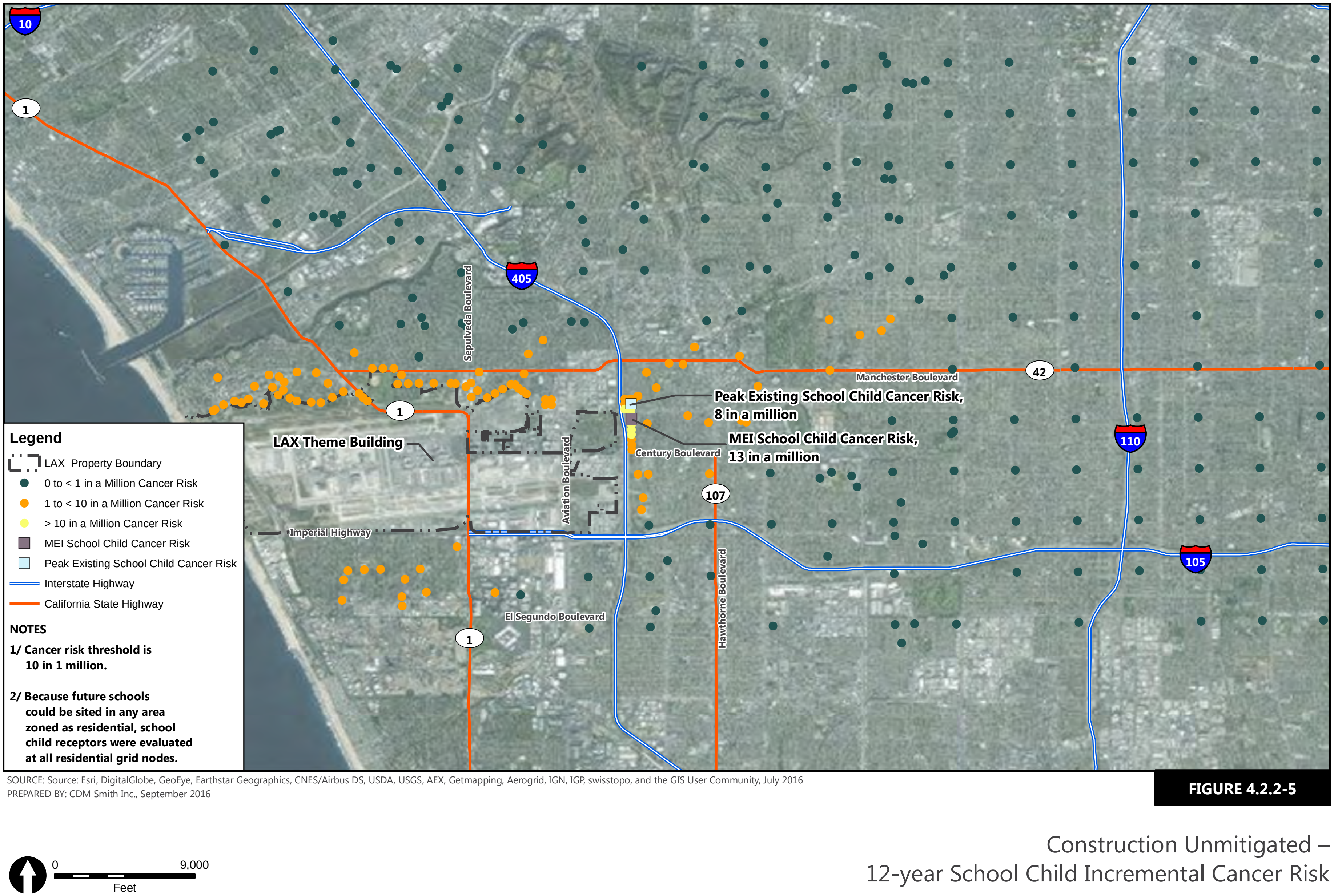

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FIGURE 4.2.2-5

Construction Unmitigated –
12-year School Child Incremental Cancer Risk

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Adult Worker

For the construction scenario, adult workers were evaluated at 338 off-airport grid nodes and 2 on-airport/off-site grid nodes.[26] Because the exposure period of the adult worker is 25 years and construction of the project is estimated to be 14 years, incremental cancer risk for the worker was estimated assuming 7 years of construction, 7 years of construction and operations (the incremental difference between the 2024 Future With Project scenario and the 2024 Future Without Project), and 11 years of operations, including 4 years of the 2024 Future With Project operations and 7 years of the 2035 Future With Project operations.

Construction-related cancer risks for adult workers at the peak off-airport location are estimated to be 3 in one million. Overall, Project-related cancer risks for the proposed Project for adult workers would be below the threshold of significance. The peak location of construction-related cancer risks is shown on **Figure 4.2.2-6**.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for construction impacts associated with the proposed Project are provided in **Table 4.2.2-3**. 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.

Resident (Adult and Child) and School Children

The maximum HI for a resident living at the peak hazard location for a single year of construction of the proposed Project is 0.3, projected to occur in 2026. The peak residential hazard location is shown on Figure 4.2.2-3. 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 4.2.2-3, all incremental chronic non-cancer health hazards for residential adults and for young children are would be below the significance threshold of 1.

HI 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 0.5, projected to occur in 2020. The peak commercial hazard location is shown on Figure 4.2.2-6. All incremental chronic non-cancer health hazards for adult workers would be below the significance threshold of 1.

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

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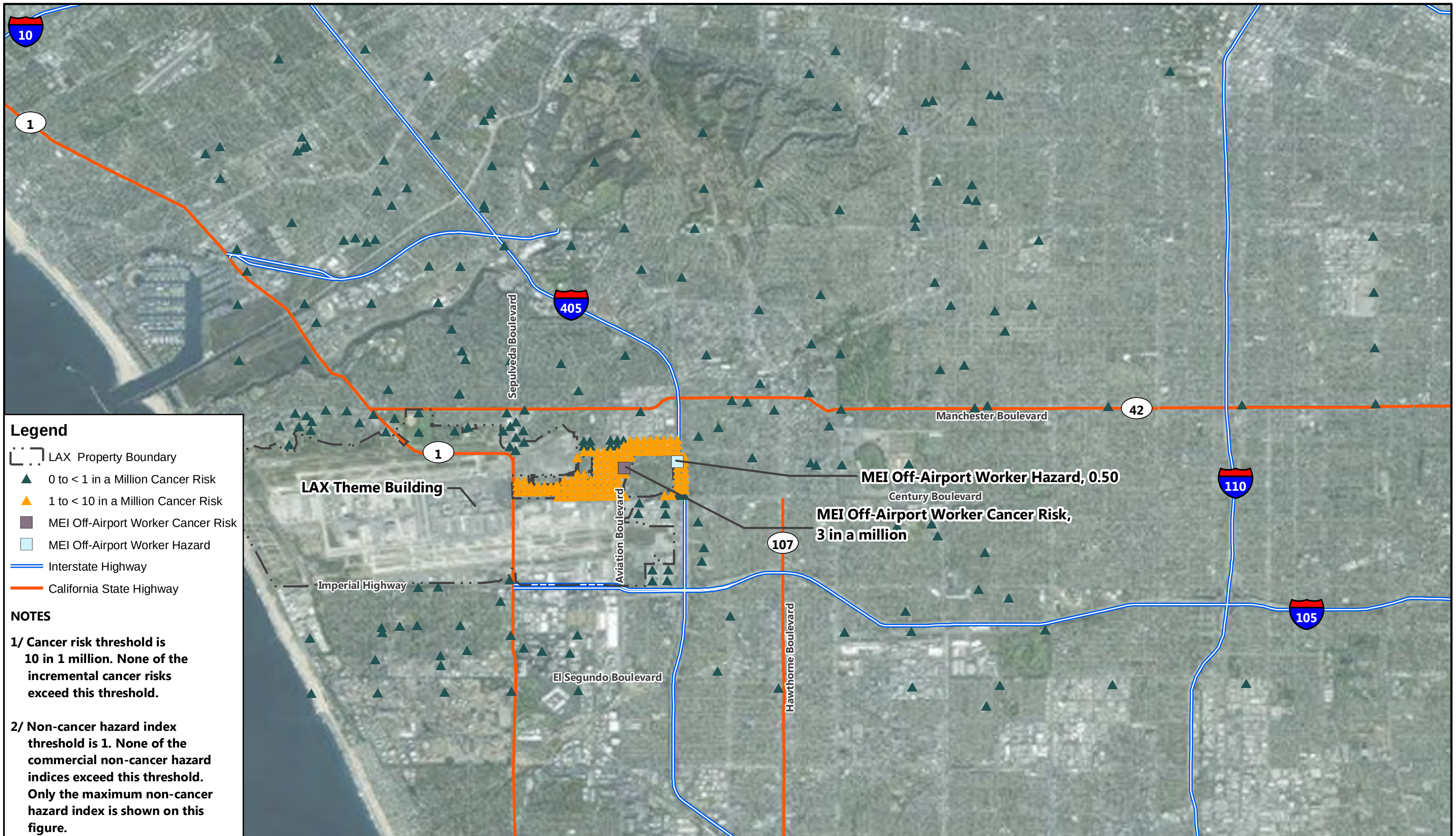

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FIGURE 4.2.2-6

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Construction Unmitigated –
25-year Off-Airport Worker Incremental Cancer Risk

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Table 4.2.2-3: Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals from Project Construction

YEAR	RESIDENT[1/]	ADULT WORKER[1/]	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
2017	0.003	0.01	1	No
2018	0.05	0.28	1	No
2019	0.16	0.37	1	No
2020	0.22	0.50	1	No
2021	0.17	0.43	1	No
2022	0.14	0.40	1	No
2023	0.07	0.16	1	No
2024	0.27	0.27	1	No
2025	0.28	0.31	1	No
2026	0.29	0.34	1	No
2027	0.28	0.32	1	No
2028	0.28	0.31	1	No
2029	0.26	0.27	1	No
2030	0.26	0.26	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Acute Non-Cancer Health Hazards

Acute exposures to acrolein typically result in mild irritation of eyes and mucous membranes. Acute exposures to formaldehyde may result in irritation to the eye and respiratory system and adverse effects to the immune system. Acute exposures to nickel could also impact the immune system. Acute exposures to benzene could result in developmental impacts and impacts to the immune and hematologic systems. The target organ for acute toxicity of manganese is the nervous system.

Acute non-cancer health hazards were evaluated for two peak emission years of construction – 2019 and 2020. The year 2019 is estimated to have the peak diesel exhaust emissions and the year 2020 is estimated to have the peak construction dust emissions for particulate matter. In general, the peak years have nearly twice the emissions of the next closest year.

A HI equal to or greater than 1 would indicate possible acute adverse health effects. For the off-site worker, the hazard quotient for acute exposure to manganese during construction is equal to 1; all other hazard quotients are less than 1. The acute REL for manganese is set at or below a level at which no adverse health impacts are expected for the majority of the population and includes an uncertainty factor of 300. Hence, no health impacts are expected. Also, note that the target organ for acute toxicity of manganese is the nervous system and its actions would not be expected to be additive to the effects of acrolein and formaldehyde which target the respiratory system. Formaldehyde and manganese are the only chemicals with acute HI estimates close to the threshold of one. No additive impacts from exposure to manganese and other site related TAC are expected.

Formaldehyde and manganese are responsible for 5 to 47 percent and 30 to 84 percent, respectively, of all predicted construction-related acute non-cancer health hazards. Acrolein is only responsible for 0.04 to 0.4 percent of all predicted acute non-cancer health hazards associated with construction of the proposed Project. Benzene and nickel have greater contributions (2 to 14 percent and 4 to 7 percent, respectively) to the total acute non-cancer hazard than acrolein, though insignificant when compared to formaldehyde and manganese. Acrolein, which is associated with aircraft operations, results are shown here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects. Maximum acute non-cancer health hazards associated with exposure to these three chemicals from the proposed Project construction are summarized in **Table 4.2.2-4**.

Table 4.2.2-4: Construction-Related Acute Non-Cancer Health Hazards

	MANGANESE[1/]	ACROLEIN[1/]	FORMALDEHYDE[1/]	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
On-Site Worker	0.03 – 0.1	0.0001 – 0.001	0.02 – 0.2	1	No
Off-Site Worker	0.003 – 1.0	0.00001 – 0.003	0.001 – 0.1	1	No
Residential	0.002 – 0.7	0.000006 – 0.0004	0.0008 – 0.05	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Occupation Effects

Impacts to on-site workers during construction were evaluated by comparing estimated 8-hour air concentrations of TAC at the on-site location under the proposed Project for construction to the CalOSHA 8-hour PEL-TWAs. Two years were selected as the peak emission years – 2019 and 2020. The year 2019 is estimated to have the peak diesel exhaust emissions and the year 2020 is estimated to have the peak construction dust emissions for particulate matter. In general, the peak years have nearly twice the emissions of the next closest year. As shown in **Table 4.2.2-5**, the resulting 8-hour concentrations are a few to several orders of magnitude below PELs for all TAC. This means that air concentrations from airport emissions with construction of the proposed Project would not exceed those considered "acceptable" by CalOSHA standards, and construction impacts on workers' health would be less than significant.

[Draft]

Table 4.2.2-5: Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC[1/]	CALOSHA PEL TWA (ug/m^3) [2/]	2019	2020
1,2,4-Trimethylbenzene	12,5000	0.1338	0.1467
1,3-Butadiene	2,200	0.0488	0.0549
2,2,4-Trimethylpentane	N/A	0.0835	0.1033
Acetaldehyde	45,000	1.7978	1.8829
Acrolein	250	0.0006	0.0015
Benzene	324	0.5179	0.5607
Cumene	245,000	0.0049	0.0053
Cyclohexane	1,050,000	0.0101	0.0148
Ethyl Benzene	22,000	0.0804	0.0914
Ethylene	N/A	3.5431	3.7510
Formaldehyde	375	3.6026	3.7801
Hexane	180,000	0.0462	0.0593
Isoprene	N/A	0.0006	0.0016
Methanol	260,000	0.0079	0.0090
Methyl Ethyl Ketone {2-Butanone}	590,000	0.3619	0.3788
Naphthalene	500	0.0222	0.0236
Propionaldehyde	N/A	0.2373	0.2485
Propylene	N/A	0.6490	0.7002
Styrene	215,000	0.0152	0.0167
Toluene	37,000	0.3847	0.4424
Aluminum	2,000	0.4790	0.4051
Ammonium	18,000	0.0352	0.0229
Antimony	500	0.0005	0.0003
Arsenic	10	0.0002	0.0002
Barium	500	0.0566	0.0612
Bromine	700	0.0004	0.0003
Cadmium	5	0.0006	0.0004
Chlorine	1,500	0.0317	0.0278
Chromium	5	0.0001	0.0001
Cobalt	20	0.0008	0.0007
Copper	1,000	0.0115	0.0126
Lead	50	0.0040	0.0033
Manganese	200	0.0078	0.0069
Mercury	25	0.0004	0.0003
Nickel	500	0.0012	0.0012
Phosphorus	100	0.0115	0.0095
Selenium	200	0.0001	0.0001
Silicon	5,000	1.3128	1.1230
Silver	10	0.0003	0.0002
Sulfates	NA	0.2626	0.2013
Thallium	100	0	0
Vanadium (Fume Or Dust)	50	0.0026	0.0023
Zinc	NA	0.0092	0.0072
Xylenes	435,000	0.2779	0.3240

NOTES: NA = Not Available

1/ All TACs for which PEL-TWAs are available are listed. PEL-TWAs are not available for 2,2,4-trimethylpentane, ethylene, isoprene, propionaldehyde, propylene, sulfates, zinc and diesel exhaust.

2/ California Occupational Safety and Health Administration. ,*Table AC-1, Permissible Exposure Limits for Chemical Contaminants*, 2008,Available: http://www.dir.ca.gov/title8/5155table_ac1.html.

3/ Concentrations are for Theme Building at grid point 855.

SOURCE: Appendix F of this EIR 2016.
PREPARED BY: CDM Smith, September 2016.

Population-based Risks

Cancer Risks

To determine the population-wide risks, Project-related risks for construction impacts were evaluated for the 70-year residential scenario. The risks were plotted and cancer risk isopleths determined to identify the 1 in a million zone of impact. Using the 2015 population by census tract (estimated from the 2010 census population available from the U.S. Census[27]) cross-referenced with the calculated cancer risks, the cancer burden was calculated for each zone of impact. The total cancer burden for the Project was determined as the sum of individual census tract cancer burdens. As shown in **Table 4.2.2-6**, the zone of impact of 1 in a million (10^{-6}), shown in **Figure 4.2.2-7** for the evaluated scenarios would have a cancer burden below the threshold of significance of 0.5.

Table 4.2.2-6: Construction-Related Cancer Burden

ZONE OF IMPACT	CANCER BURDEN	THRESHOLD	EXCEEDS THRESHOLD?
Within 1 in a million	0.4	0.5	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Chronic and Acute Non-Cancer Hazards

Because all incremental chronic non-cancer health hazards for residents are below 1, population-level estimates for chronic and acute non-cancer health impacts were not estimated.

Operations

For future operations, including the 2024 and 2035 horizon years, 1,439 grid points were analyzed along the Airport fence-line and within the study area in the vicinity of the Airport. These locations are shown on Figure 4.2.2-2. The modeling grid for operations varies from the construction modeling grid in order to include traffic impacts from nearby roadways. In addition, risks and hazards for operations were added to the construction risks and hazards, for years 2024 and beyond.

Cancer Risks

Peak operation-related cancer risks for MEI are presented in **Table 4.2.2-7** and summarized in the following sections; calculations are presented in Appendix F. As shown, operation-related cancer risks would be below the threshold of significance for all receptors for the 2024 Future With Project vs. 2024 Future Without Project scenario and for the adult resident for the 2035 Future With Project vs. 2035 Future Without Project scenario.

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27 U.S. Department of Commerce, U.S. Census Bureau, Available: http://www.census.gov/.

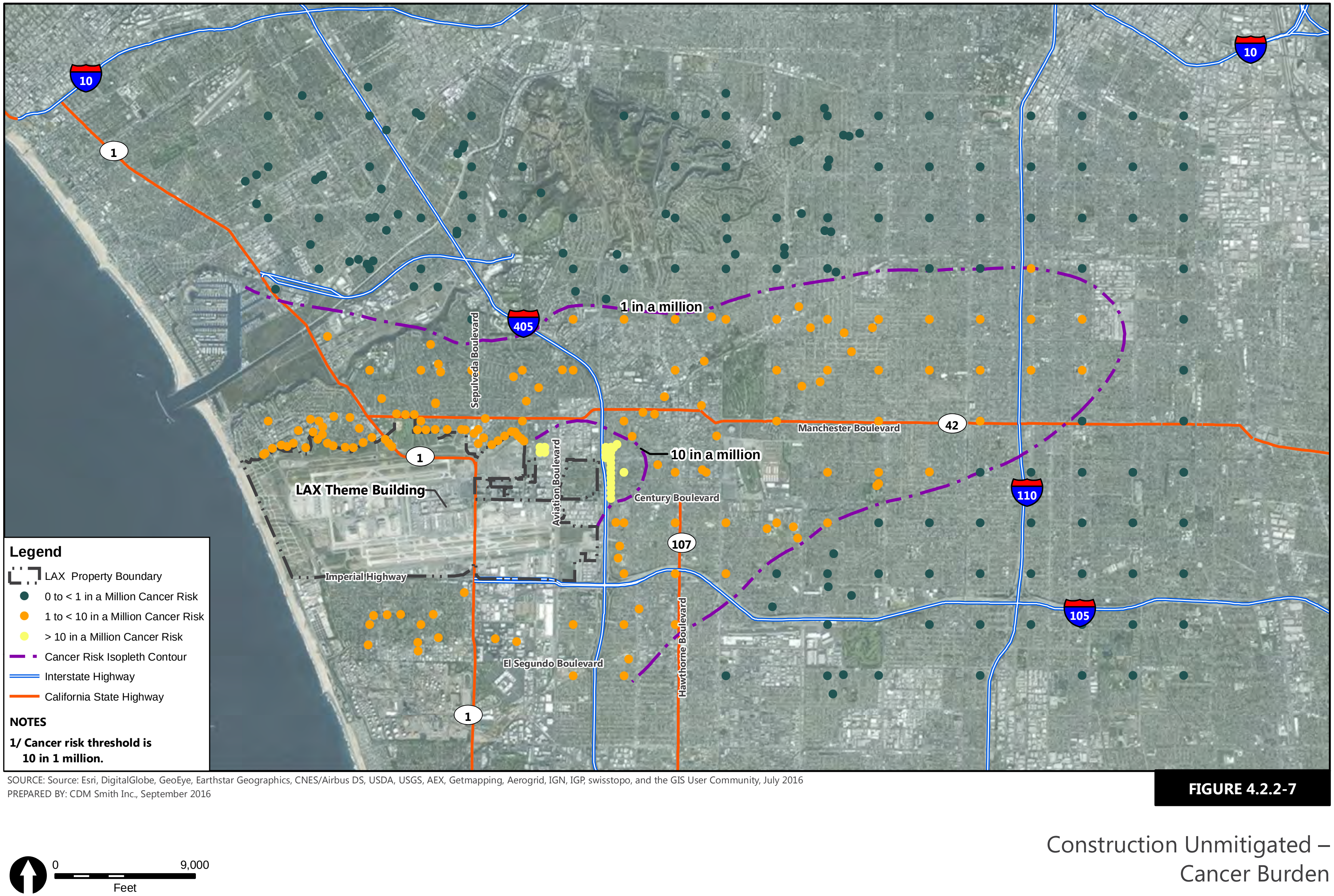

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FIGURE 4.2.2-7

Construction Unmitigated – Cancer Burden

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Table 4.2.2-7: Incremental Peak Operation-Related Cancer Risks for Maximally Exposed Individuals

RECEPTOR TYPE	CANCER RISKS (PER MILLION PEOPLE)	THRESHOLD (PER MILLION PEOPLE)	EXCEEDS THRESHOLD?
2024 FUTURE WITH PROJECT VS. 2024 FUTURE WITHOUT PROJECT			
Adult Resident, 30 years	8	10	No
Child Resident, 9 years	8	10	No
School Child, 12 years	3	10	No
Adult Worker, 25 years	1	10	No
2035 FUTURE WITH PROJECT VS. 2035 FUTURE WITHOUT PROJECT			
Adult Resident, 30 years	4	10	No
Child Resident, 9 years	3	10	No
School Child, 12 years	1	10	No
Adult Worker, 25 years	0.8	10	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Residents (Adult and Child)

2024 Future With Project vs. 2024 Future Without Project Scenario

For operations, residents were evaluated at 333 off-Airport grid nodes.[28] As compared to the 2024 Future Without Project scenario, the 2024 Future With Project would result in an incremental cancer risk for a child resident of 8 in one million, and an incremental cancer risk for an adult resident of 8 in one million. An exposure period for child residents was assumed to be 9 years; exposure for adult residents was assumed to be 30 years. These estimates show that Project-related cancer risks for adults and for young children would be below the threshold of significance of 10 in one million. Peak locations for an adult and for a child are shown on **Figures 4.2.2-8** and **4.2.2-9**, respectively.

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

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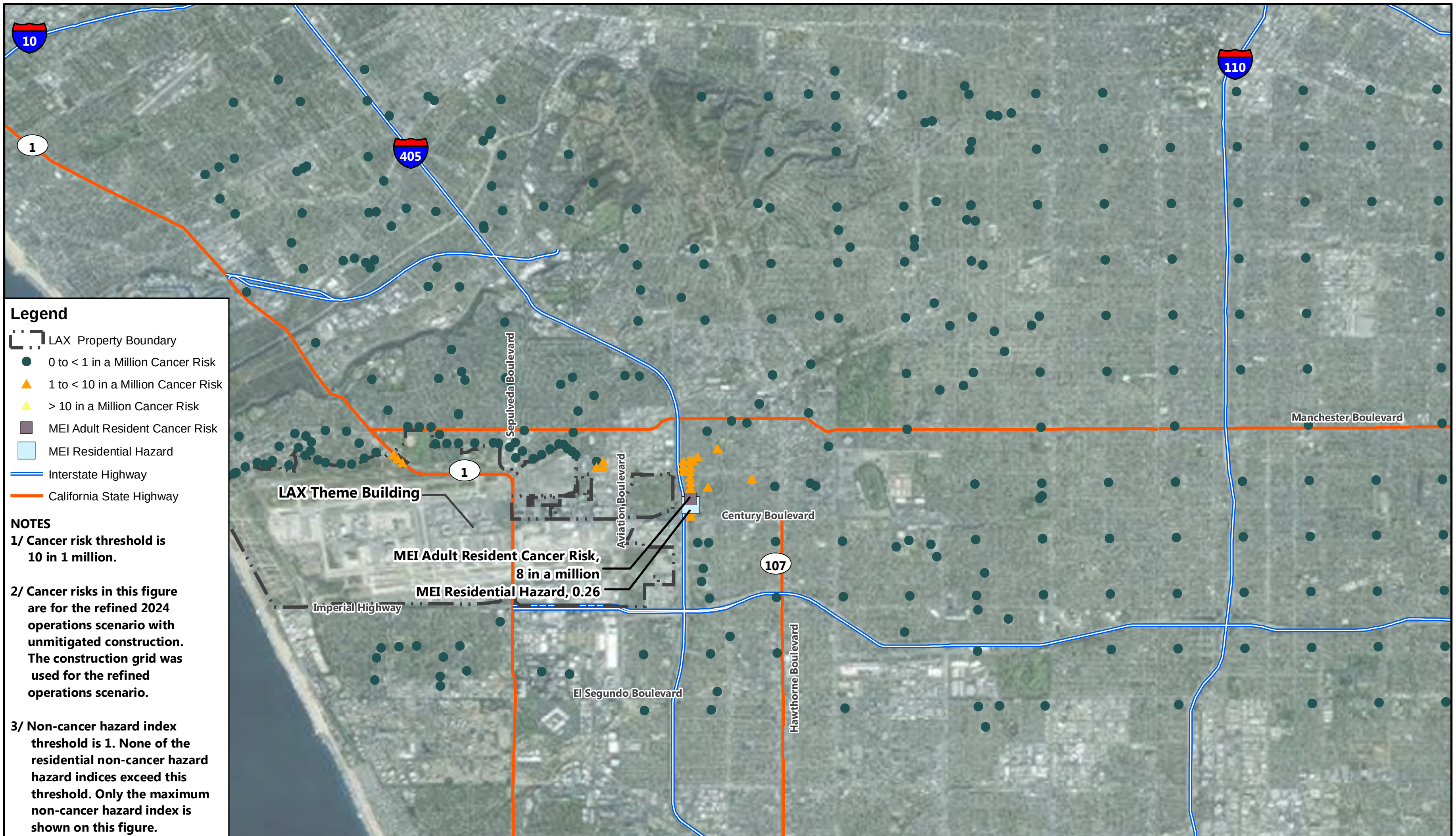

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FIGURE 4.2.2-8

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2024 Future With Project Scenario vs. 2024 Future Without Project Scenario – 30-year Adult Residential Incremental Cancer Risk

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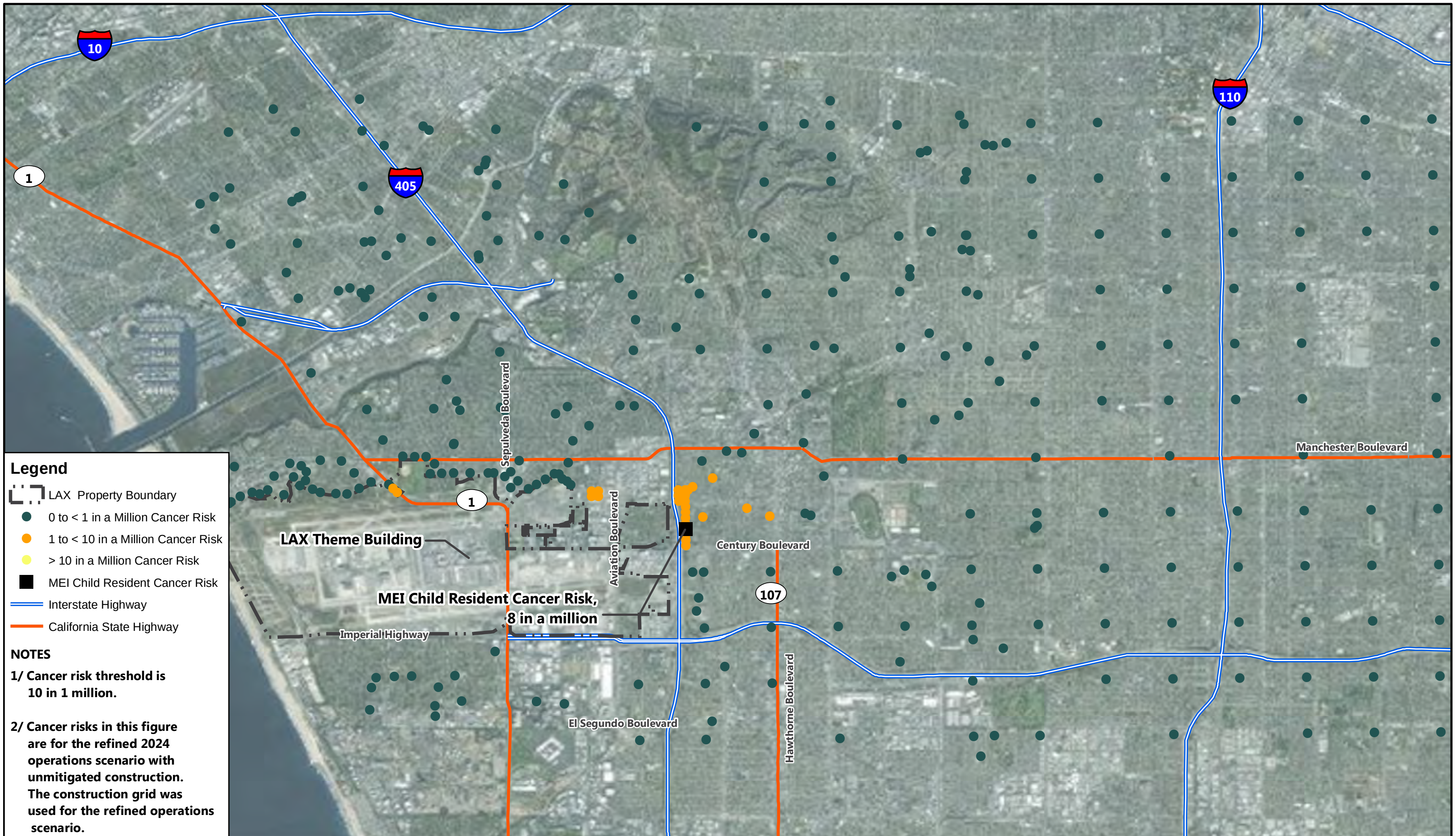

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FIGURE 4.2.2-9

2024 Future With Project Scenario vs. 2024 Future Without Project Scenario – 9-year Child Residential Incremental Cancer Risk

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<u>2035 Future With Project vs. 2035 Future Without Project Scenario</u>

Under the 2035 Future With Project scenario compared to the 2035 Future Without Project scenario, the incremental cancer risk for a child resident is estimated to be 3 in one million; the incremental cancer risk for an adult resident is estimated to be 4 in one million. These estimates show that project-related cancer risks would be below the threshold of significance of 10 in one million for adults and young children. These peak locations for an adult and for a child are shown on **Figures 4.2.2-10** and **4.2.2-11**, respectively.

School Child

Receptor locations for school children were evaluated at all residential or residential/commercial locations assuming schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations.

<u>2024 Future With Project vs. 2024 Future Without Project Scenario</u>

Under the 2024 Future With Project scenario compared to the 2024 Future Without Project scenario, the incremental cancer risk for a school child would result in an estimated 3 in one million, which is below the threshold of significance of 10 in one million. An exposure period for school children was assumed to be 12 years. This peak location is shown on **Figure 4.2.2-12**. The closest existing school with peak cancer risks would be Oak Street Elementary School, as shown on Figure 4.2.2-12. Incremental cancer risk for children attending school at this location for 12 years is estimated to be 0.7 in one million, which is less than the threshold of significance of 10 in one million. Since the school is an elementary school that provides instruction for children from kindergarten through sixth grade (i.e., 7 years), actual exposure for the school child would be less than the 12-year exposure scenario that was modeled.

<u>2035 Future With Project vs. 2035 Future Without Project Scenario</u>

Under the 2035 Future With Project compared to the 2035 Future Without Project scenario, the incremental cancer risk for a school child is estimated to be 1 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-13**. In 2035, peak cancer risks at Oak Street Elementary School are estimated to be 0.3 in one million, which is less than the threshold of significance of 10 in one million.

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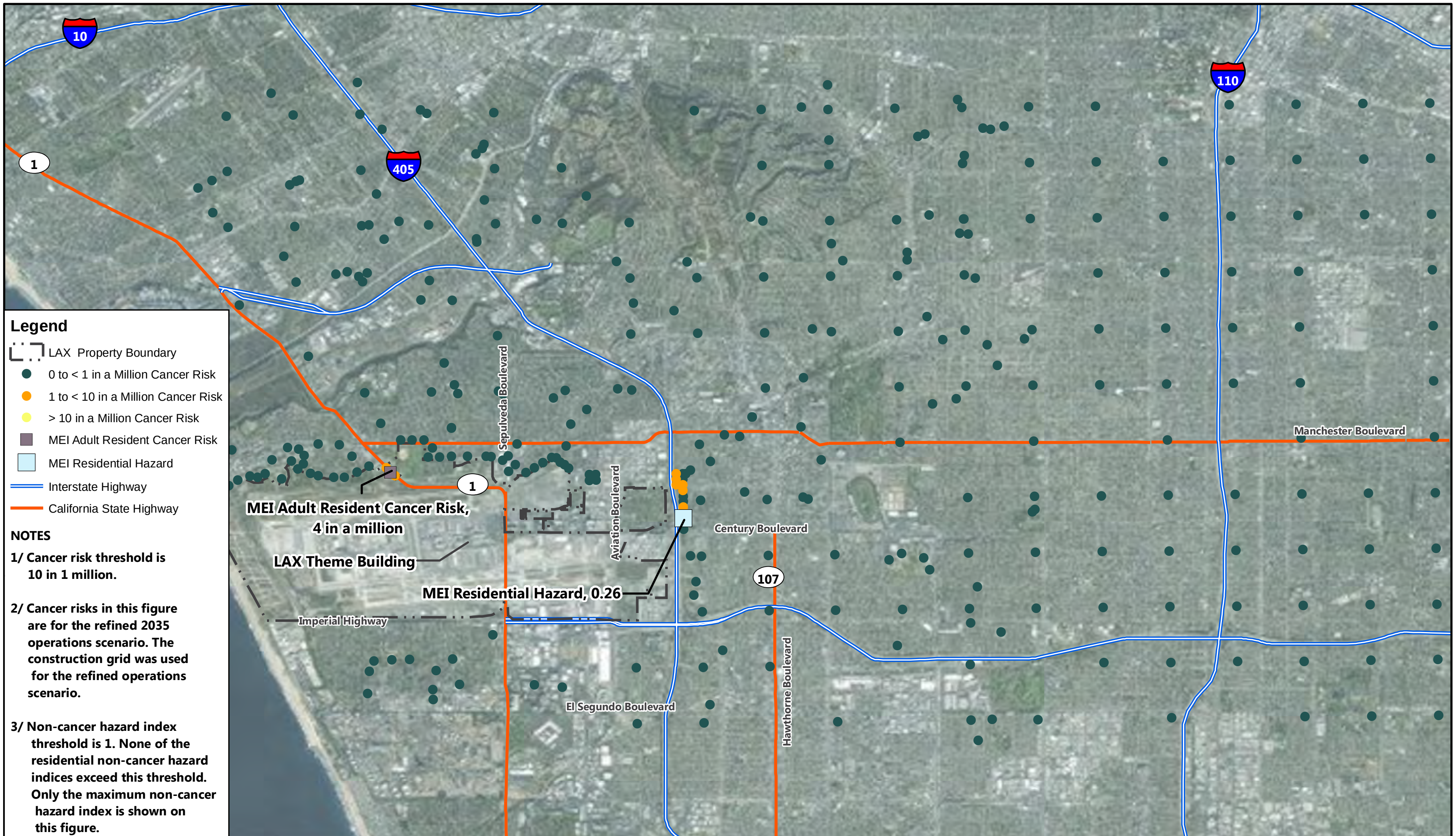

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FIGURE 4.2.2-10

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2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 30-year Adult Residential Incremental Cancer Risk

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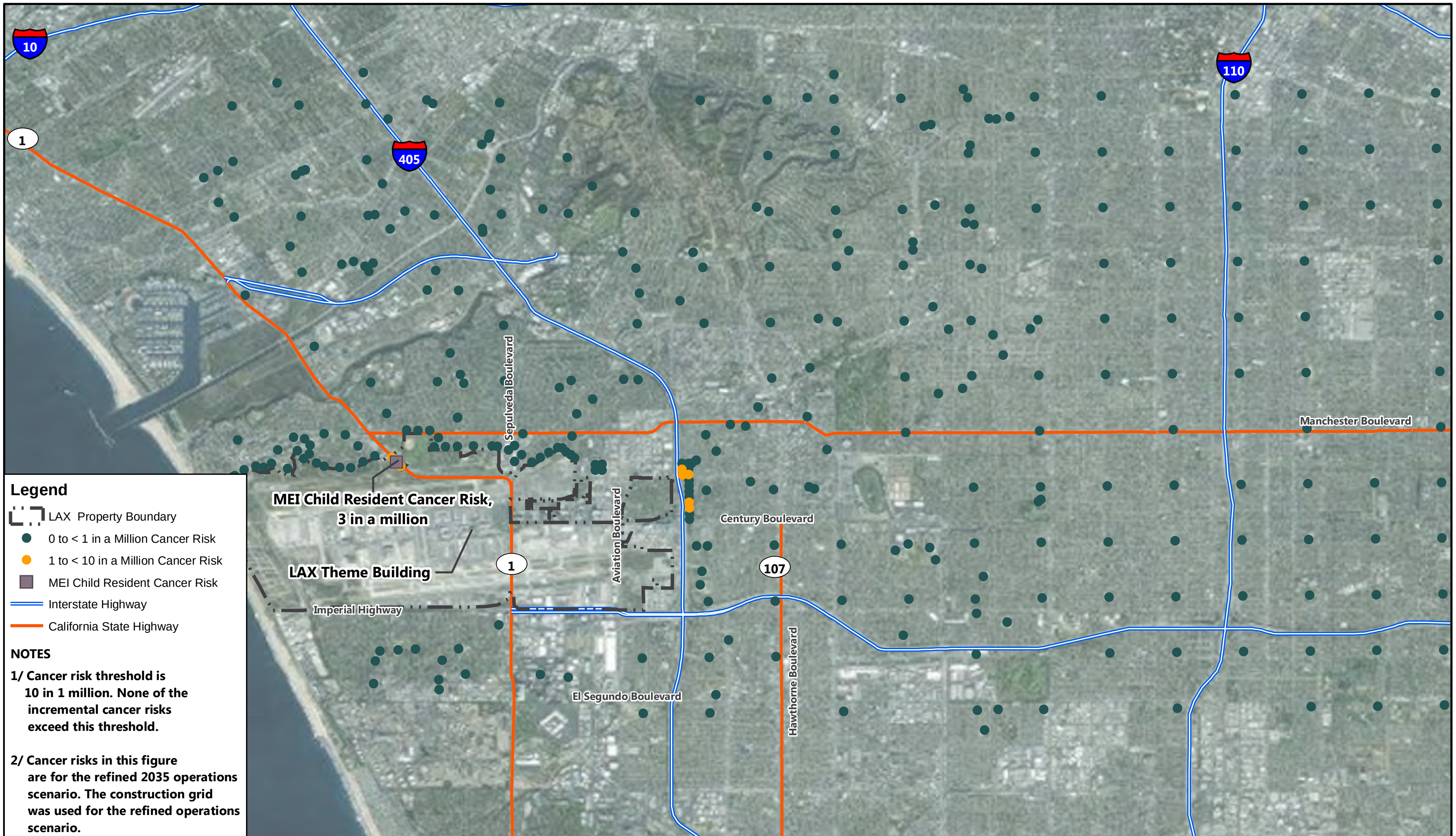

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FIGURE 4.2.2-11

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 9-year Child Residential Incremental Cancer Risk

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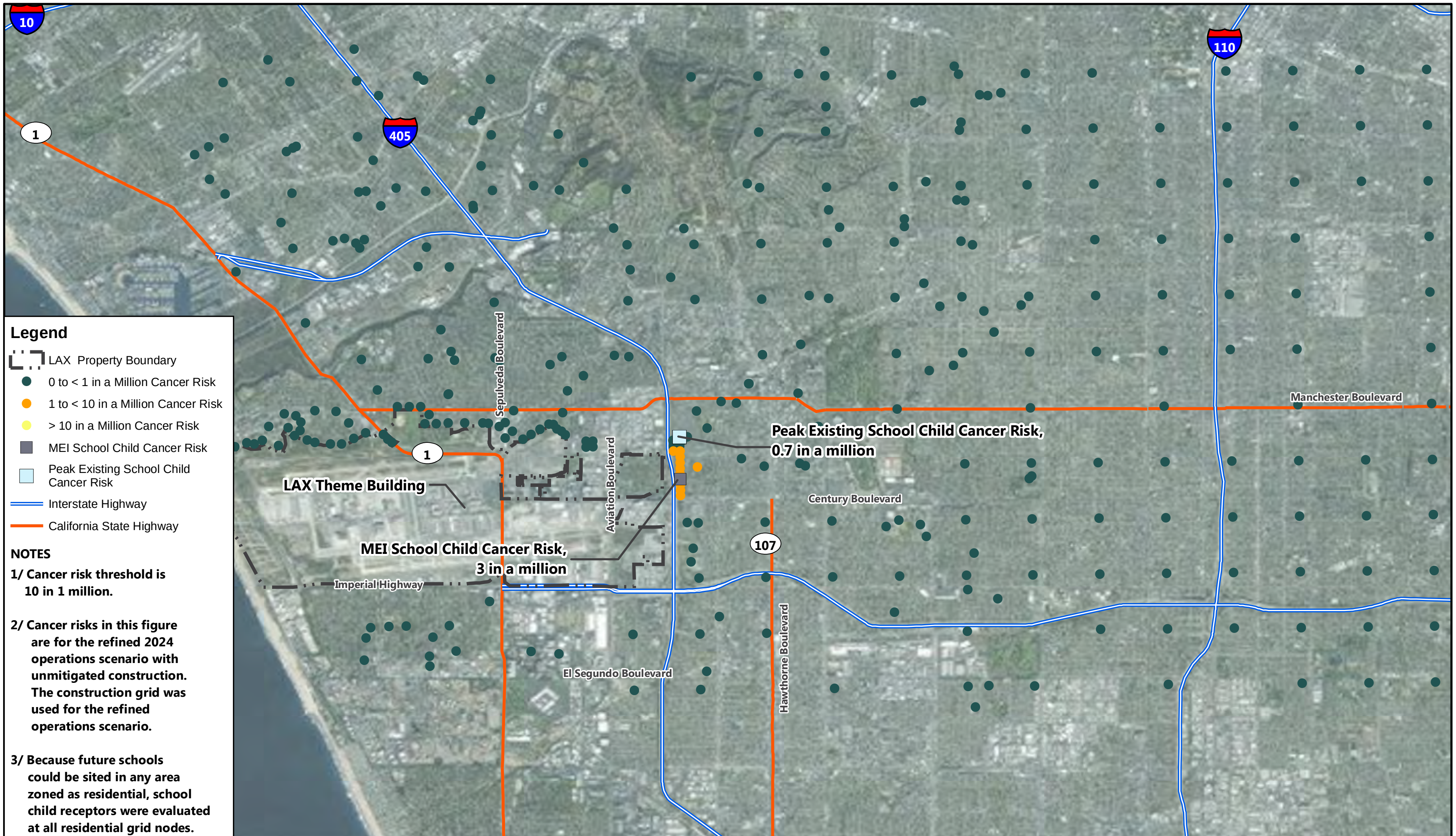

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FIGURE 4.2.2-12

2024 Future With Project Scenario vs. 2024 Future Without Project Scenario - 12-year School Child Incremental Cancer

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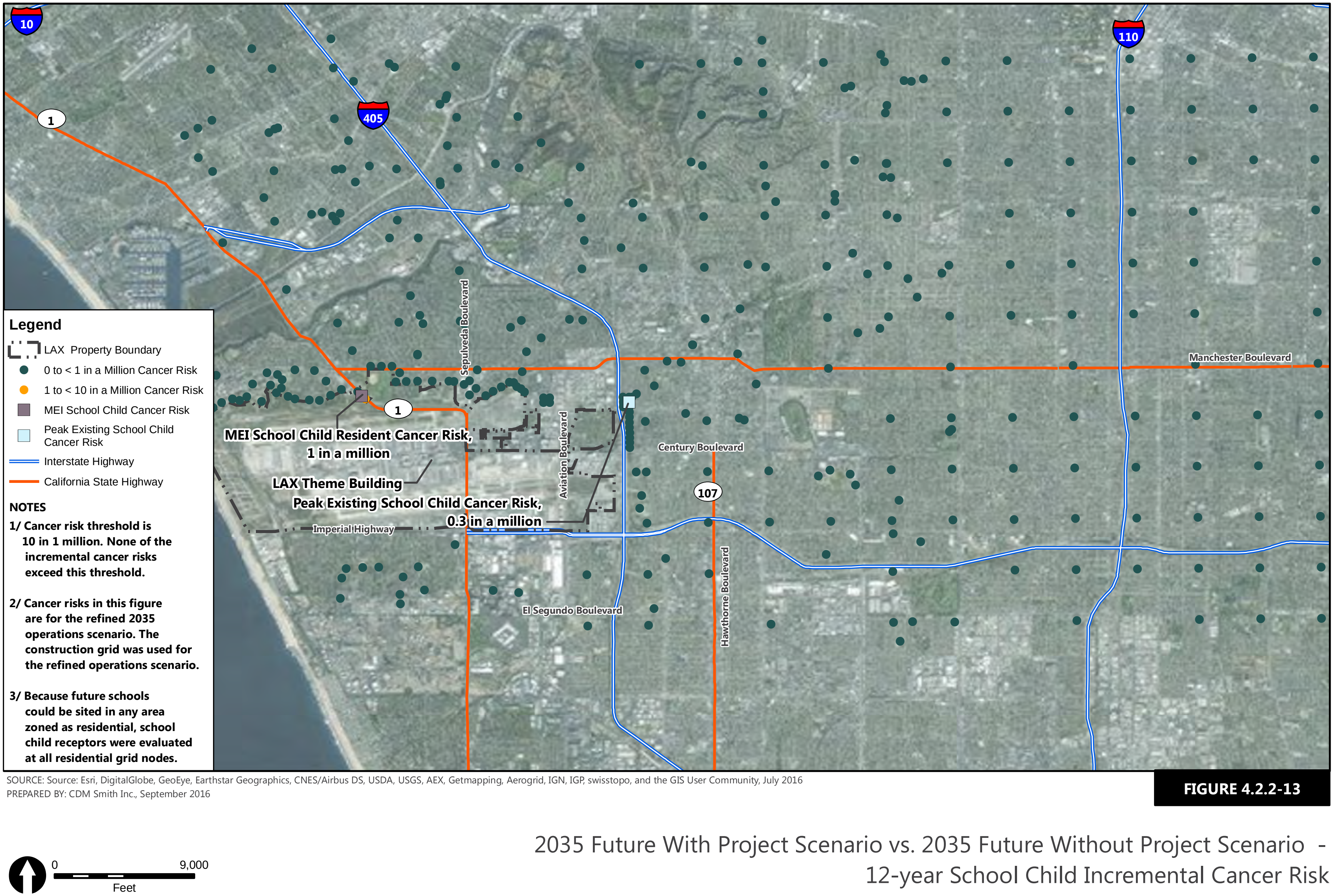

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FIGURE 4.2.2-13

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 12-year School Child Incremental Cancer Risk

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Adult Worker

2024 Future With Project vs. 2024 Future Without Project Scenario

Under the 2024 Future With Project scenario compared to the 2024 Future Without Project, the incremental cancer risk for a worker assuming a 25-year exposure scenario is estimated to be 1 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-14**.

2035 Future With Project vs. 2035 Future Without Project Scenario

Under the 2035 Future With Project scenario compared to the 2035 Future Without Project, the incremental cancer risk for an adult worker assuming a 25-year exposure scenario is estimated to be 0.8 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-15**.

Project-related cancer risks for adult workers would be below the threshold of significance for the proposed Project during operations under both the 2024 and 2035 horizon years.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for operational impacts associated with the proposed Project are provided in **Table 4.2.2-8**. Hazard indices are shown for both the 2024 and 2035 horizon years. As shown, chronic non-cancer human health hazards would be less than significant for both residents and workers.

Table 4.2.2-8: Project-Related Non-Cancer Hazard Indices

INCREMENTAL CHRONIC NON-CANCER HUMAN HEALTH HAZARDS FOR MAXIMALLY EXPOSED INDIVIDUALS FROM PROJECT OPERATIONSRECEPTOR TYPE	2024 FUTURE WITH PROJECT VS. 2024 FUTURE WITHOUT PROJECT1/	2035 FUTURE WITH PROJECT VS. 2035 FUTURE WITHOUT PROJECT1/	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
Residential	0.26	0.26	1	No
Commercial	0.26	0.28	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

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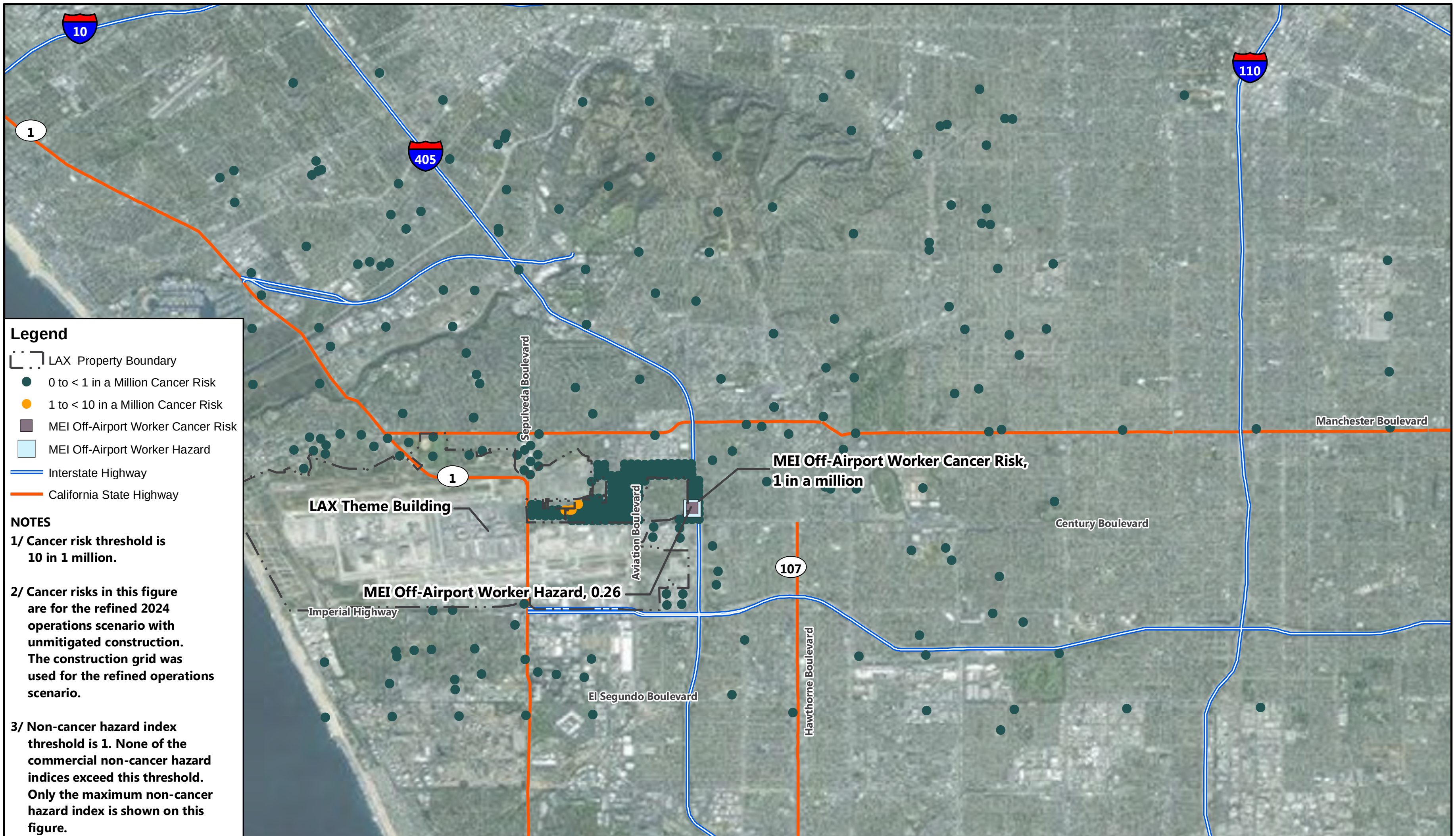

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FIGURE 4.2.2-14

2024 Future With Project Scenario vs. 2024 Future Without Project Scenario - 25-year Off-Airport Worker Incremental Cancer Risk

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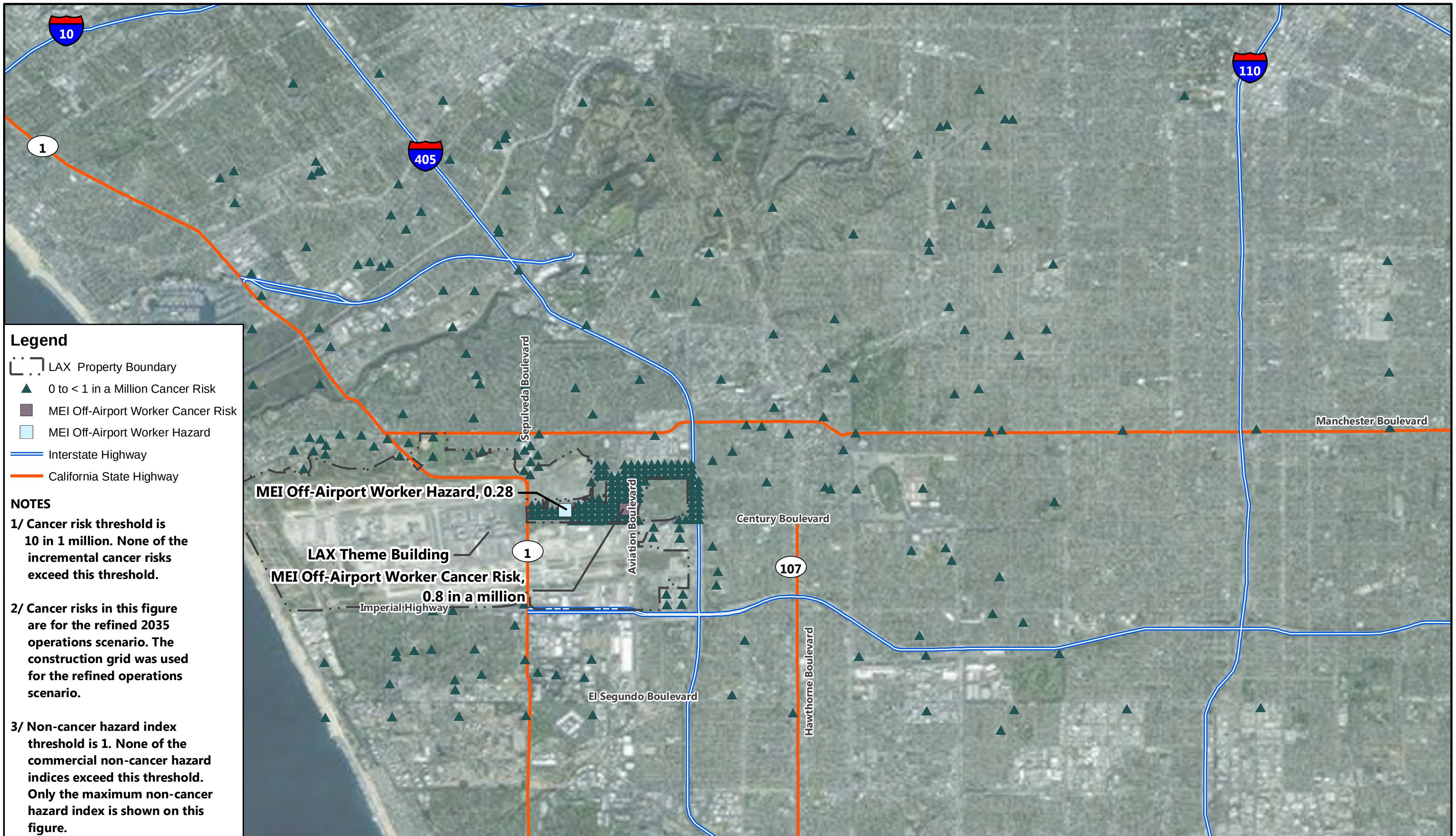

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FIGURE 4.2.2-15

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2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 25-year Off-Airport Worker Incremental Cancer Risk

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Resident

2024 Future With Project vs. 2024 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for residents are estimated to be 0.26 under the 2024 Future With Project scenario. This peak location is shown on Figure 4.2.2-8. Project-related chronic non-cancer health hazards for adult workers for the proposed Project would be below the threshold of significance.

2035 Future With Project vs. 2035 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for residents are estimated to be 0.26 under the 2035 Future With Project scenario. This peak location is shown on Figure 4.2.2-10. Project-related chronic non-cancer health hazards for adult workers for the proposed Project would be below the threshold of significance.

Adult Worker

2024 Future With Project vs. 2024 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for adult workers are estimated to be 0.26 under the 2024 Future With Project scenario. This peak location is shown on Figure 4.2.2-14. Project-related chronic non-cancer health hazards for adult workers for the proposed Project area would be below the threshold of significance.

2035 Future With Project vs. 2035 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for adult workers are estimated to be 0.28 under the 2035 Future With Project scenario. This peak location is shown on Figure 4.2.2-15. Project-related chronic non-cancer health hazards for adult workers for the proposed Project are would be below the threshold of significance.

Acute Non-Cancer Health Hazards

Acute non-cancer health hazards were evaluated for each horizon year of operations in 2024 and 2035, as shown in **Table 4.2.2-9**. As shown, all hazards indices due to acute exposure are below 1 for all evaluated on-site and off-site grid nodes within the study area of the proposed Project. Hence, acute non-cancer health impacts from operations of the proposed Project are unlikely. A HI equal to or greater than 1 indicates the potential for acute adverse health effects.

Acrolein, which is a byproduct of aircraft engine emissions, results are shown here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects.

Table 4.2.2-9: Operations-Related Acute Non-Cancer Health Hazards

	MANGANESE 1/		ACROLEIN 1/		FORMALDEHYDE 1/	
RECEPTOR TYPE	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT
On-Site Worker						
Maximum HI	0.02	0.02	0.0004	0.0002	0.0004	0.0005
Average HI	0.01	0.02	0.0003	0.0001	0.00031	0.0003
Minimum HI	0.003	0.004	0.00006	0.00003	0.00007	0.00006
Off-Site Worker						
Maximum HI	0.02	0.02	0.0005	0.0003	0.0004	0.0006
Average HI	0.003	0.003	0.00006	0.00003	0.00008	0.00007
Minimum HI	0.0006	0.0006	0.00001	0.000006	0.00001	0.00001
Residential						
Maximum HI	0.05	0.05	0.0009	0.0005	0.0007	0.0006
Average HI	0.003	0.003	0.00006	0.00003	0.00007	0.00006
Minimum HI	0.0005	0.0005	0.00001	0.000005	0.00002	0.00001

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Occupation Effects

Impacts to on-site workers during operations were evaluated by comparing estimated 8-hour air concentrations of TAC at the on-site location under the proposed Project for controlled construction to the CalOSHA 8-hour PEL-TWAs. As shown in **Table 4.2.2-10**, the resulting 8-hour concentrations are a few to several orders of magnitude below PELs for all TAC. This result suggests that air concentrations from airport emissions with implementation of the proposed Project would not exceed those considered "acceptable" by CalOSHA standards.

[Draft]

Table 4.2.2-10 (1 of 2): Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC [1/]	CALOSHA PEL TWA (UG/M^3) [2/]	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT[3/]	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT[3/]
1,2,4-Trimethylbenzene	12,5000	0.00083	0.00052
1,3-Butadiene	2,200	0.00046	0.00027
2,2,4-Trimethylpentane	N/A	0.00190	0.00109
Acetaldehyde	45,000	0.00079	0.00117
Acrolein	250	0.00011	0.00006
Benzene	324	0.00217	0.00141
Cumene	245,000	0.00001	0.00001
Cyclohexane	1,050,000	0.00050	0.00028
Ethyl Benzene	22,000	0.00088	0.00052
Ethylene	NA	0.00629	0.00494
Formaldehyde	375	0.00241	0.00280
Hexane	180,000	0.00131	0.00075
Isoprene, Except From Vegetative Emission Sources	N/A	0.00012	0.00006
Methanol	260,000	0.00010	0.00006
Methyl Ethyl Ketone {2-Butanone}	590,000	0.00013	0.00022
Naphthalene	500	0.00005	0.00003
Propionaldehyde	N/A	0.00010	0.00015
Propylene	N/A	0.00269	0.00176
Styrene	215,000	0.00010	0.00006
Toluene	37,000	0.00481	0.00283
Aluminum	2,000	0.03472	0.04110
Ammonium	18,000	0.00095	0.00112
Antimony	500	0.00002	0.00003
Arsenic	10	0.00001	0.00001
Barium	500	0.00801	0.00916
Bromine	700	0.00002	0.00001
Cadmium	5	0.000001	0.000001
Chlorine	1,500	0.00136	0.00119
Chromium	5	0.00001	0.00001

Table 4.2.2-10 (2 of 2): Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC [1/]	CALOSHA PEL TWA (UG/M^3) [2/]	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT[3/]	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT[3/]
Cobalt	20	0.00001	0.00001
Copper	1,000	0.00169	0.00192
Lead	50	0.00005	0.00006
Manganese	200	0.00051	0.00059
Mercury	25	0.000003	0.000003
Nickel	500	0.00010	0.00012
Phosphorus	100	0.00092	0.00109
Selenium	200	0.000004	0.000005
Silicon	5,000	0.10823	0.12770
Silver	10	0.00000001	0.00000002
Sulfates	NA	0.01042	0.00953
Thallium	100	0.000001	0.000002
Vanadium (Fume Or Dust)	50	0.00012	0.00013
Zinc	N/A	0.00053	0.00061
Xylenes	435,000	0.00400	0.00234

NOTES:

1/ All TACs for which PEL-TWAs are available are listed. PEL-TWAs are not available for 2,2,4-trimethylpentane, ethylene, isoprene, propionaldehyde, propylene, sulfates, zinc and diesel exhaust.

2/ California Occupational Safety and Health Administration, *Table AC-1, Permissible Exposure Limits for Chemical Contaminants*, 2008, Available: http://www.dir.ca.gov/title8/5155table_ac1.html.

3/ Concentrations are for the Theme Building at grid point 855.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Population-based Risks

Cancer Risks

To determine the population-wide risks, Project-related risks for operation impacts were evaluated for the 70-year residential scenario. As shown in **Table 4.2.2-11**, the zone of impact of 1 in a million (10^{-6}) for the for 2024 Future With Project vs. 2024 Future Without Project would have a cancer burden below the threshold of significance of 0.5. The cancer isopleths and peak locations for 2024 Future With Project vs. 2024 Future Without Project are shown on **Figure 4.2.2-16**. Since cancer burdens in 2024 are below threshold and total cancer risk for 2035 Future With Project vs. 2035 Future Without Project is less than 2024 Future With Project vs. 2024 Future Without Project, cancer burdens were not calculated for 2035 Future With Project vs. 2035 Future Without Project. The cancer isopleths and peak locations for 2035 Future With Project vs. 2035 Future Without Project are shown on **Figure 4.2.2-17**.

Table 4.2.2-11: Operation-Related Cancer Burden

ZONE OF IMPACT	CANCER BURDEN[1/]	THRESHOLD	EXCEEDS THRESHOLD?
Within 1 in a million	0.05	0.5	No

NOTE:

1/ Cancer burdens provided for 2024 Future With Project vs. 2024 Future Without Project.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Chronic Non-Cancer Hazards

Because all incremental chronic non-cancer health hazards for residents are below 1, population-level estimates for chronic non-cancer health impacts were not estimated.

Acute Non-Cancer Hazards

Because all incremental acute non-cancer health hazards for residents are below 1, population-level estimates for acute non-cancer health impacts were not estimated.

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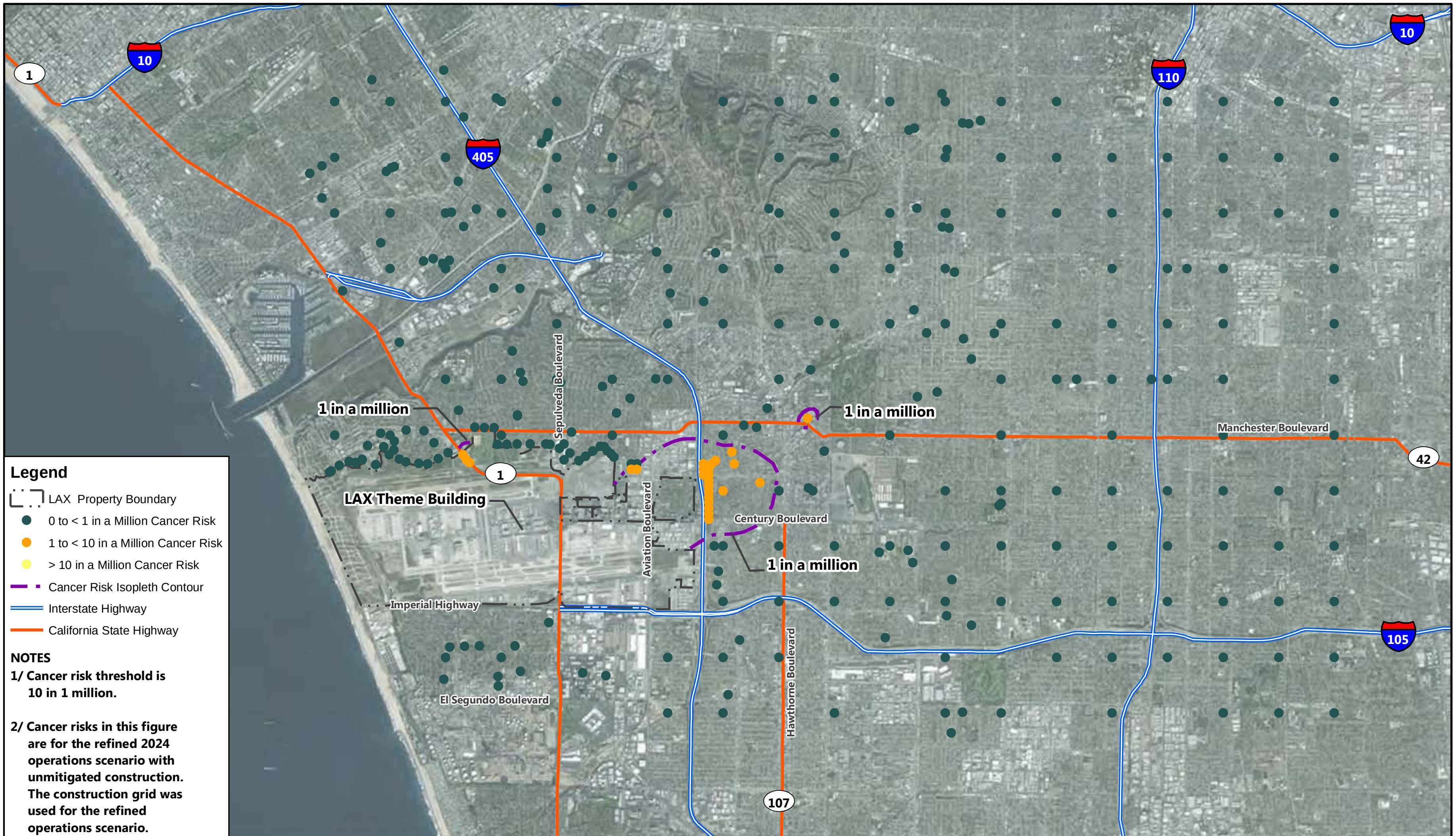

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-16

2024 Future With Project v. 2024 Future Without Project Operations – Cancer Risk

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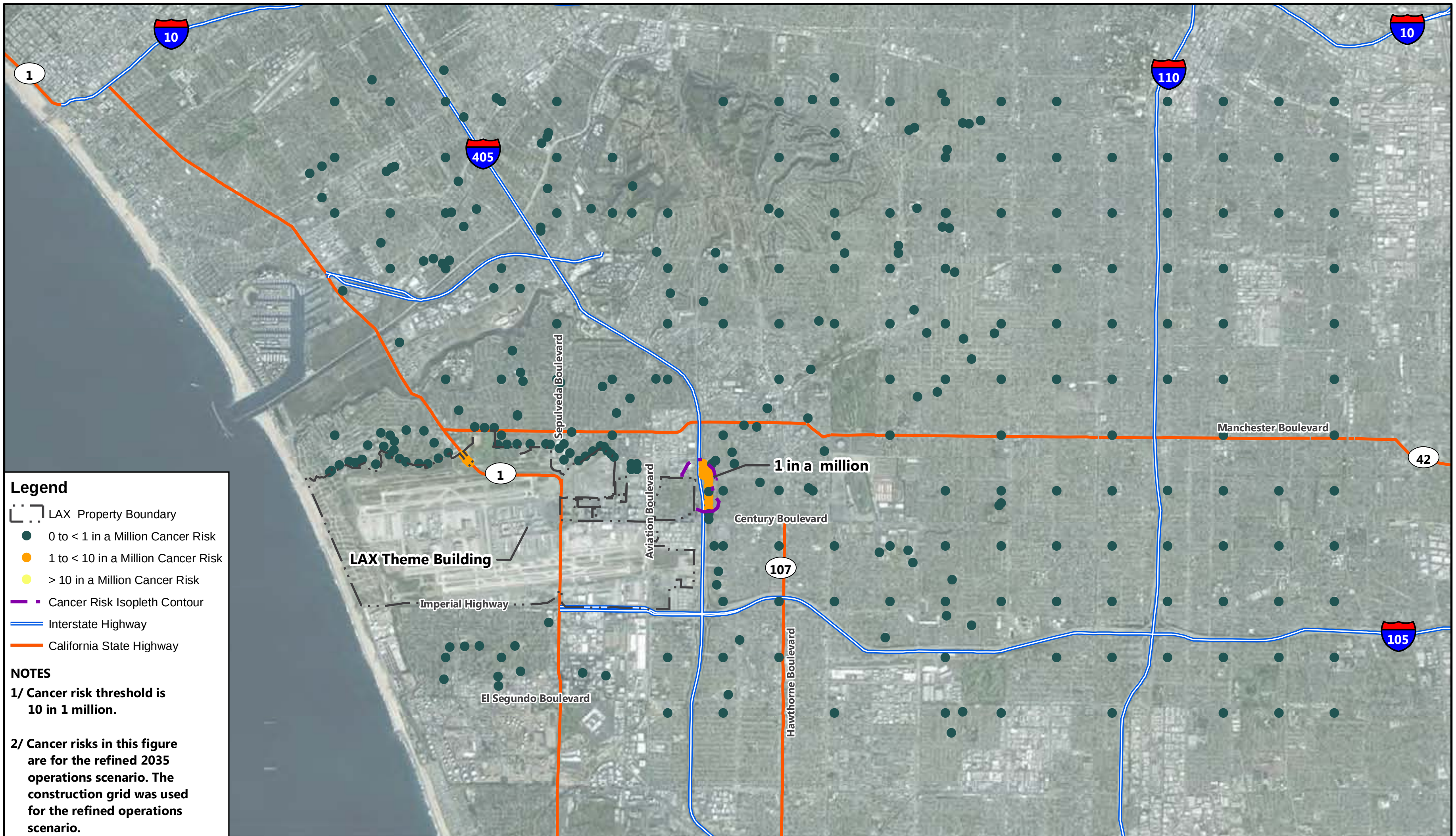

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-17

2035 Future With Project v. 2035 Future Without Project Operations – Cancer Risk

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4.2.2.4.2 Summary of Unmitigated Impacts

The HHRA addressed incremental health impacts associated with construction and operations 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 above the threshold of significance of 10 in one million for child resident, school child, and adult resident. Incremental cancer risk impacts from construction would be significant.
- Incremental cancer risks associated with operation of the proposed Project for 2024 conditions would be below the threshold of significance of 10 in one million for all receptor types (i.e., child resident, school child, adult resident, and adult worker). Incremental cancer risks associated with operation of the proposed Project for 2035 conditions would be below the threshold of significance of 10 in one million for all receptor types. Incremental cancer risk impacts from operations would be less than significant.
- Project-related population-based risks for 70-year residents for construction impacts associated with the proposed Project within the zone of impact of 1 in a million (10^{-6}) would be below the threshold of significance of 0.5.
- Project-related population-based risks for 70-year residents for operations associated with the proposed Project within the zone of impact of 10^{-6} would be below the threshold of significance of 0.5.
- Given the results of cancer burden calculations, cancer risk estimates affect too small an area and population to be judged significant, and, overall the project can be determined to have a less than significant impact.
- Incremental chronic non-cancer hazard indices associated with construction and operation of the proposed Project would be below the threshold of significance for all receptor types (i.e., child resident, school child, adult resident, and adult worker). Incremental chronic non-cancer impacts from construction and operations 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 and operation of the proposed Project. Incremental acute non-cancer impacts would be less than significant.
- Estimated maximum air concentrations for all TAC evaluated on the proposed Project site would not exceed PEL-TWA for Project construction workers or on-site workers during operations. Therefore, health impacts to on-airport/on-site workers would be less than significant.

4.2.2.5 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, relative 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.

Cancer Risks

The SCAQMD has conducted a series of urban air toxics monitoring and evaluation studies for the South Coast Air Basin called Multiple Air Toxics Exposure Study (MATES) in the South Coast Air Basin.[29] The original study published in June 1987 has been updated several times; the most recent study, MATES-IV, was published in May 2015.[30] 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 54 cancer cases per million) would not add substantially (less than 10 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.

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29 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

30 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.

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.

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 project, chronic non-cancer health hazards are primarily attributable to DPM and silicon and barium, and to a lesser extent acrolein and chlorine, aluminum, nickel, cobalt, and manganese. 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).[31] 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[32] for annual average concentrations yield acrolein hazard indices by census tract ranging from 0.1 to 11, with an average of 2; DPM hazard indices ranging from 0.005 to 0.5, with an average of 0.1; and chlorine hazard indices ranging from 0.003 to 0.2, with an average of 0.06. Incremental hazard indices for the proposed Project (Table 4.2.2-3) were estimated to range from 0.0034 to 0.5 below the threshold of significance of one. Given the relatively small hazard indices associated with proposed Project emissions, the proposed Project is not expected to add significantly to cumulative chronic non-cancer health hazards.

Because of the substantial uncertainties associated with the USEPA estimates[33], 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 potential interactions among acrolein and criteria pollutants. Such interactions cannot, at this time, be addressed in a quantitative fashion. A

31 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.

32 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.

33 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.

qualitative discussion of the issue is presented in the LAX Master Plan Final EIR[34] 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. Degradation may be very important for relatively reactive chemicals such as acrolein.

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[35] (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 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[36] (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

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34 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

35 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

36 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

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 ranged from 0.000006 to 0.003; associated with formaldehyde ranged from 0.0008 to 0.2; and associated with manganese ranged from 0.003 to 1. 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, cumulative acute non-cancer health hazards associated with the proposed Project would not be cumulatively considerable.

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.[37] If cumulative health risks are evaluated following this SCAQMD policy, the Project's contribution to the cumulative cancer risk would be cumulatively considerable under the unmitigated construction scenario since the incremental cancer risk impacts of the proposed Project for more than one receptor under this scenario would be above the individual cancer risk significance thresholds of 10 in one million. However, the incremental cancer risk impacts of the proposed Project under mitigated construction, 2024 operations, and 2035 operations would be below the individual cancer risk significance threshold of 10 in one million and would not be cumulatively considerable.

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 one (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.

4.2.2.6 Mitigation Measures

Air quality mitigation measures described in Section 4.2.1.7, would be applied to the proposed Project. Although developed to address air quality impacts, these mitigation measures would also reduce health risks associated with exposure to TAC. As noted in Section 4.2.1.7, the mitigation measures identified in Section 4.2.1.7 were modified due to recent experience with a lack of available Tier 4 construction equipment. The analysis for mitigated criteria air pollutant impacts assumed that the off-road construction equipment fleet would 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 also assumed to be fitted with Level 3

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

VDECS diesel particulate filters. In addition, LAWA is committing to using 90 percent renewable diesel fuel in construction equipment per MM-AQ (LAMP)-1. Applying these mitigation assumptions to the construction health risk impacts resulted substantial reductions in cancer risks; however, the child resident was still estimated to have a cancer risk of approximately 12 per million, above the 10 per million significance threshold. Therefore, LAWA is committing to a mitigation program that will result in 40 percent of the off-road construction equipment used on the Project meeting Tier 4 Final standards, 40 percent meeting Tier 4 Interim Standards, and the remaining 20 percent meeting Tier 3 standards – with 50 percent of Tier 3 compliant equipment installed with Level 3 VDECS particulate filters.

4.2.2.7 Impacts After Mitigation

The mitigation measures noted above would reduce construction-related health risk impacts associated with development of the proposed Project. The effect of implementation of these measures on construction risks are assessed below. These mitigation measures would affect only construction related emissions; emissions from Project operations, which are less than significant, would not be reduced.

Cancer Risks

Peak construction-related cancer risks for MEI, incorporating mitigation, are presented in **Table 4.2.2-12** and summarized in the following sections; calculations are presented in Appendix F. As shown, after incorporating the mitigation program noted above, construction-related cancer risks would be reduced to less than 10 in one million for all residents. Cancer burden would also be reduced, and would remain the below the significant threshold of 0.5.

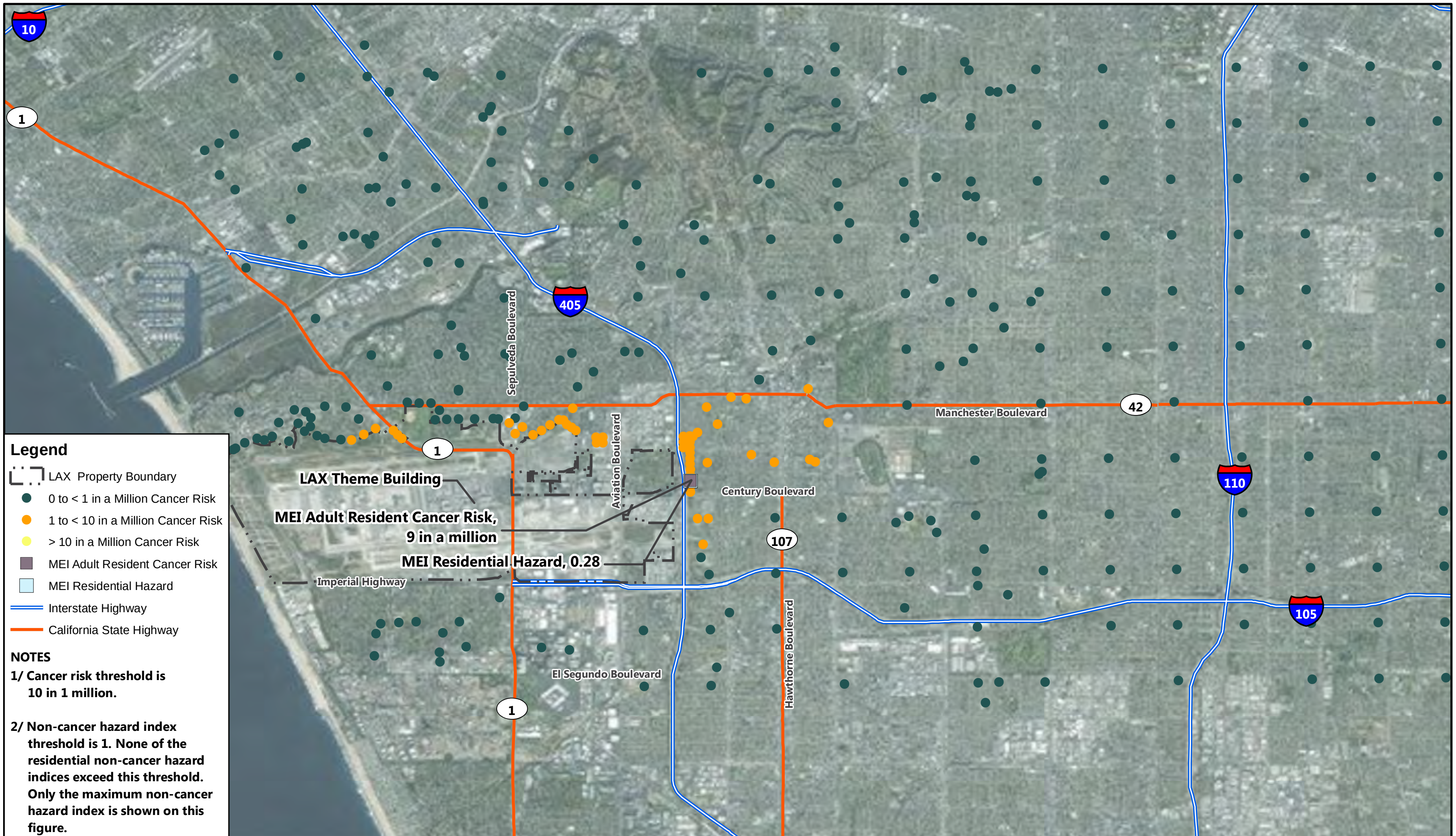
Table 4.2.2-12:Post-Mitigation Incremental Construction-Related Cancer Risks for Maximally Exposed Individuals With Mitigation

RECEPTOR TYPE	CANCER RISKS (PER MILLION PEOPLE)	THRESHOLD (PER MILLION PEOPLE)	EXCEEDS THRESHOLD?
Adult Resident, 30 years	9	10	No
Child Resident, 9 years	**9**	10	No
School Child, 12 years	4	10	No
Adult Worker, 25 years	2	10	No

SOURCE: CDM Smith, September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Residents (Adult and Child)

Mitigated incremental cancer risks for an adult resident at Peak location during construction are estimated to be 9 in one million, which is below the threshold of significance of 10 in one million. The mitigated peak cancer risk location for adult residents is shown on **Figure 4.2.2-18**.



SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-18

Post-Mitigation Construction -
30-year Adult Residential Incremental Cancer Risk

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Mitigated incremental cancer risks for a child resident at Peak location during construction are estimated to be 9 in one million, which is below the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (66 percent) followed by hexavalent chromium, contributing 27 percent. DPM is primarily an emission from diesel construction equipment, haul trucks, and concrete trucks. Hexavalent chromium is primarily an emission from fugitive dust. The mitigated peak cancer risk location for child residents is shown on **Figure 4.2.2-19**.

School Child

Mitigated incremental cancer risks for children attending schools at Peak location within the study area are estimated to be 4 in one million, which is less than the threshold of significance of 10 in one million. The mitigated peak cancer risk location for school children is shown on **Figure 4.2.2-20**. The incremental cancer risk for children attending the Oak Street Elementary School is estimated to be 2 in one million, which is less than the threshold of significance of 10 in one million.

Adult Worker

Mitigated cancer risks for adult workers at Peak location are estimated to be 2 in one million. Overall, mitigated Project-related cancer risks for the proposed Project for adult workers would be below the threshold of significance. The mitigated peak cancer risk location for adult workers is shown on **Figure 4.2.2-21**.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address chronic non-cancer hazards.

Acute Non-Cancer Health Hazards

Project-related acute non-cancer hazard indices for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address acute non-cancer hazards.

Population-Based Risk

Project-related population-based risks for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address population-based risks.

4.2.2.8 Level of Significance After Mitigation

The mitigation measures identified in Section 4.2.1.7 would reduce TAC emissions associated with the proposed Project. With implementation of these measures, incremental cancer risks at off-site receptor locations would be less than the threshold of significance.

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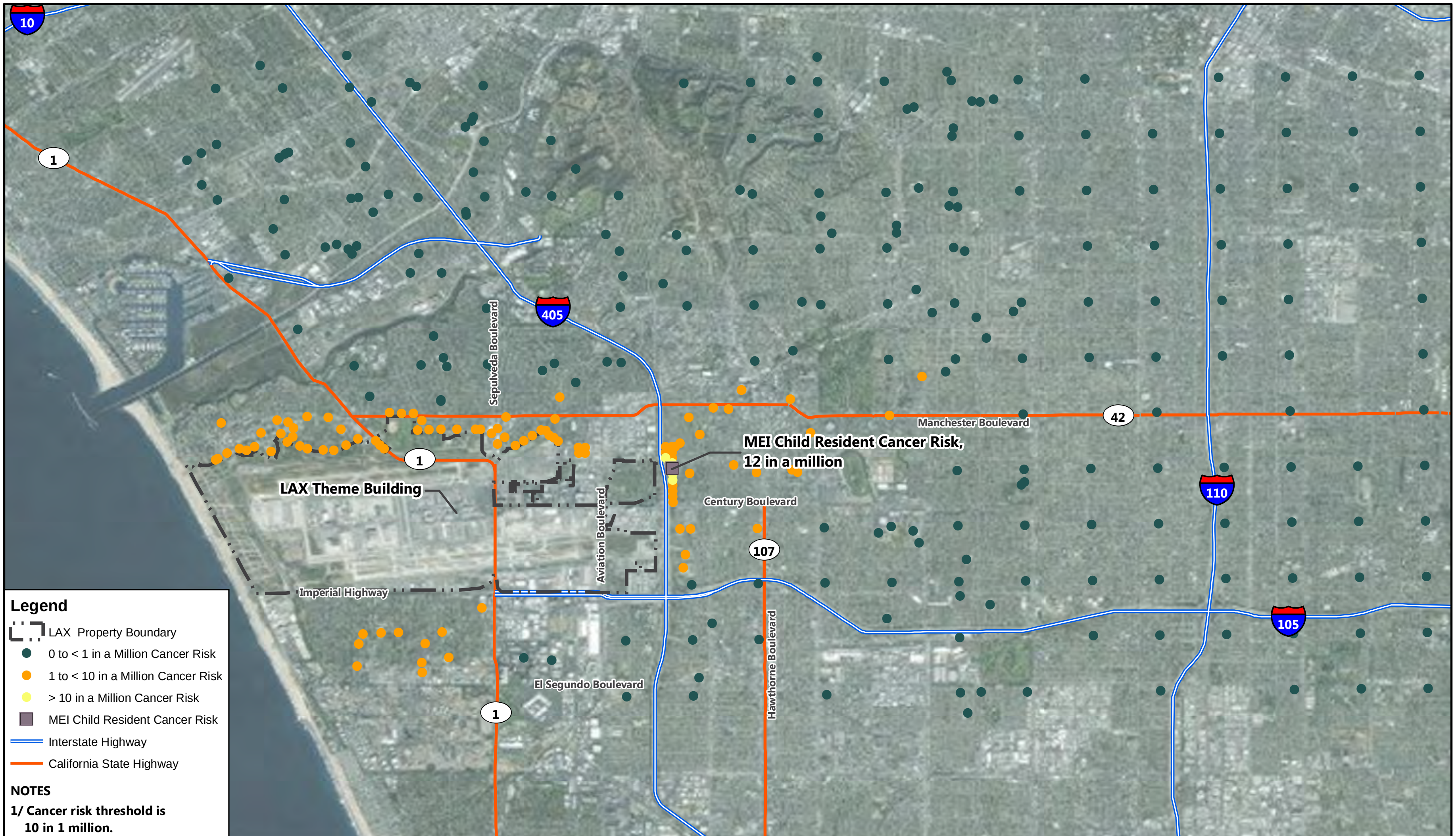

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-19

Post-Mitigation Construction -
9-year Child Residential Incremental Cancer Risk

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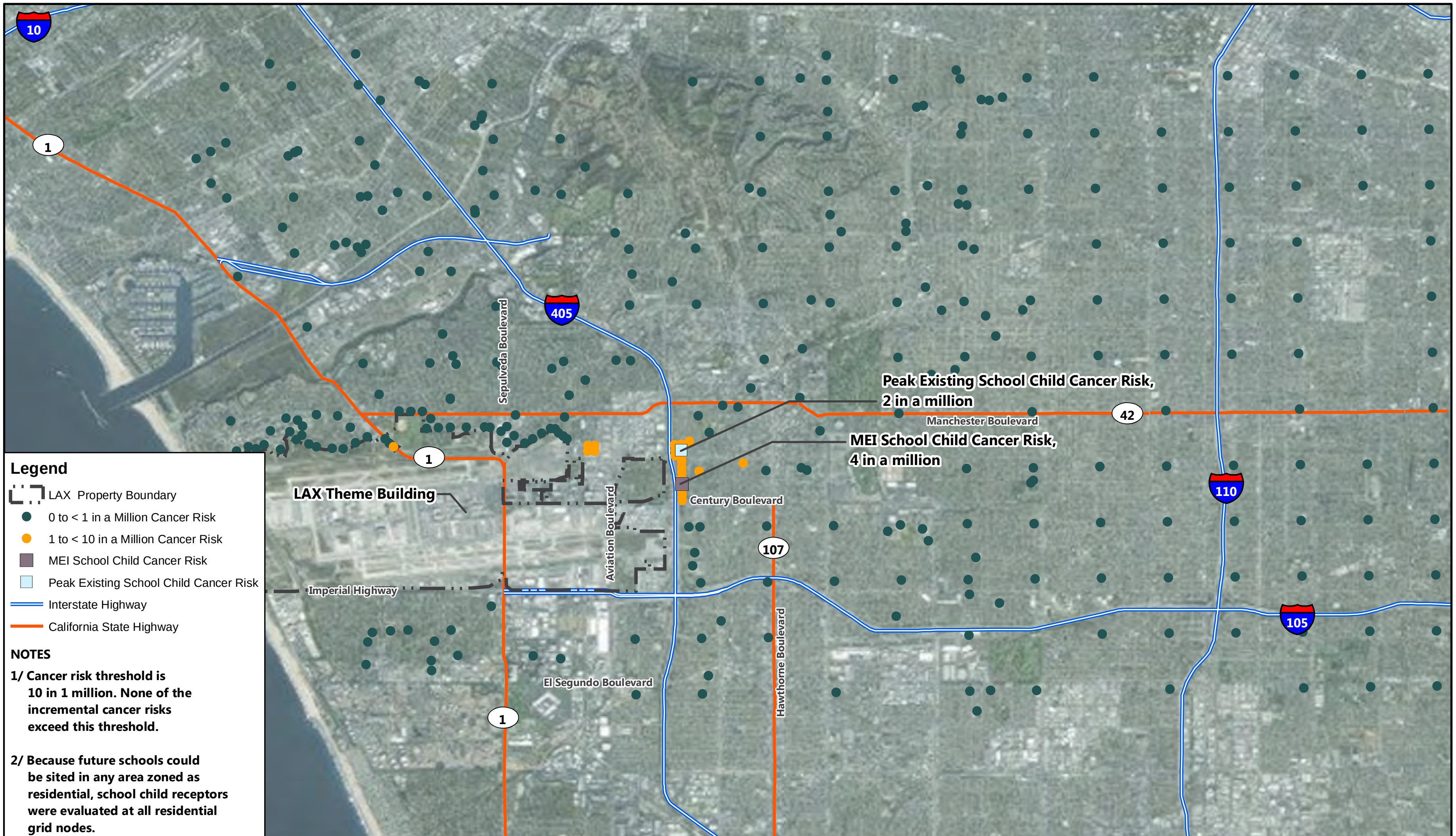

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-20

Post-Mitigation Construction -
12-year School Child Incremental Cancer Risk

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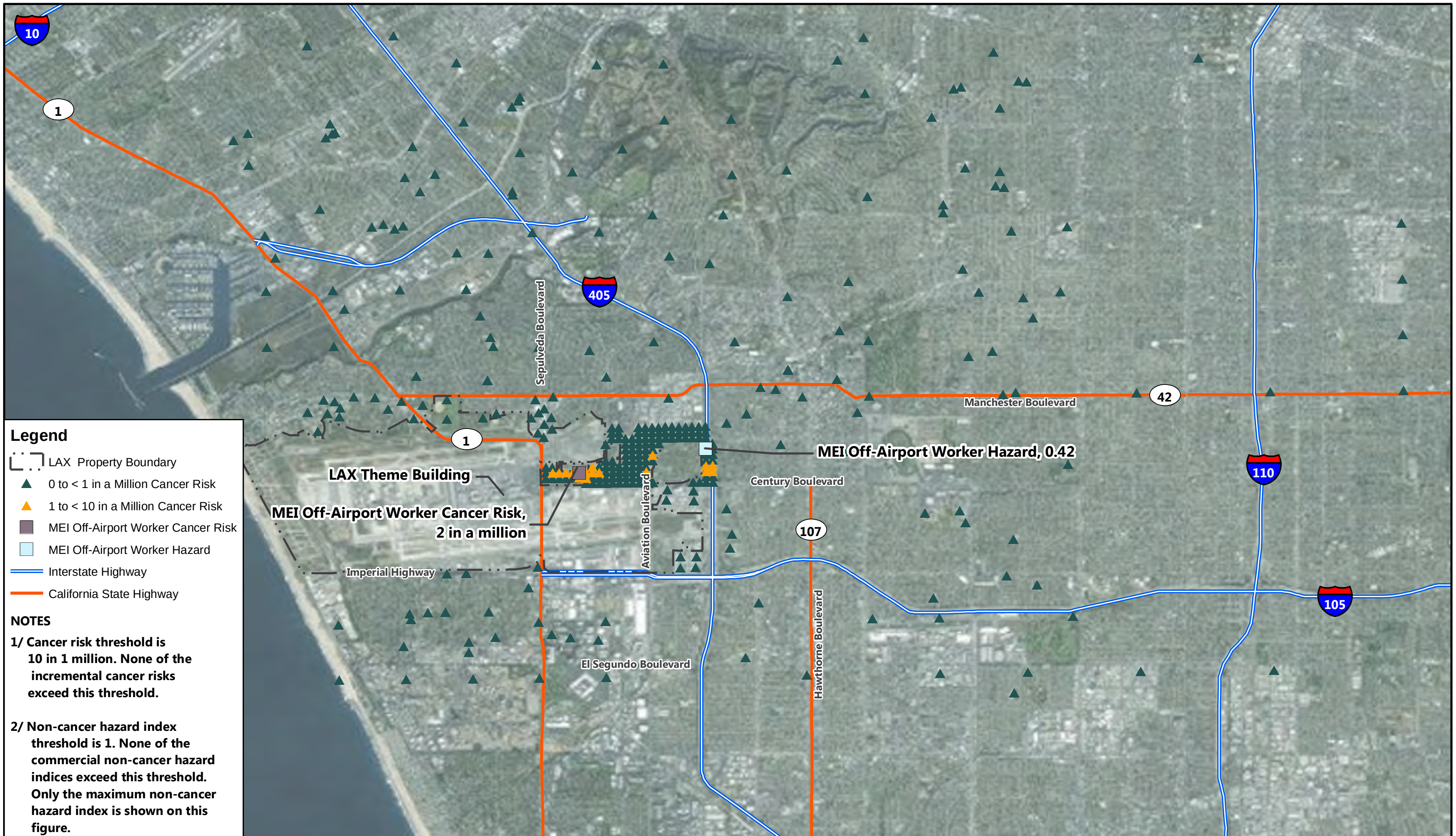

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-21

Post-Mitigation Construction -
25-year Off-Airport Worker Incremental Cancer Risk

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4.2 Air Quality and Human Health Risk

4.2.1 AIR QUALITY

This air quality analysis examines air quality emissions that would result from construction and operations associated with the proposed Project. The proposed Project would relieve traffic congestion within the Central Terminal Area (CTA) and the surrounding street network; improve access options and the travel experience for passengers; and provide a connection to the regional Los Angeles County Metropolitan Transportation Agency (Metro) rail system. The proposed Project includes an Automated People Mover (APM) system, which would provide free access to the CTA, 24 hours per day. The APM would transport passengers between the CTA and the other main components of the Project located east of the CTA, including a Consolidated Rental Car Facility (CONRAC) and Intermodal Transportation Facilities (ITFs) providing public parking facilities and locations for passenger pickup and drop-off. The ITFs would also provide access to the APM system to commercial transportation providers, including off-airport parking operators, long-distance shuttle operators, and hotel shuttles.

Impacts related to human health risks from inhalation of toxic air contaminant emissions are addressed in in Section 4.2.2, *Human Health Risk Assessment*. Greenhouse gas emissions are discussed separately in Section 4.5, *Greenhouse Gas Emissions*.

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.). Therefore, this issue is not addressed any further within this section.

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 industry software/models and federal, State, and locally approved methodologies. Results of the emission inventories were compared to daily emissions thresholds established by the South Coast Air Quality Management District (SCAQMD) for the South Coast Air Basin (Basin).[1] Results of the ambient concentrations were compared to SCAQMD concentration thresholds. This section is based in part on the detailed information contained in **Appendix F**, *Air Quality and Greenhouse Gas Emissions*, of this EIR.

4.2.1.1 Pollutants of Interest

Six criteria pollutants were evaluated for the proposed Project: ozone (O_3) using as surrogates volatile organic compounds (VOCs)[2] 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 and operations 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 have negligible impacts on Pb levels in the Basin. Section 4.6, *Hazards and Hazardous Materials*, discusses the potential for lead-based paint to be present in any structures constructed prior to 1980 and procedures to minimize generation of lead emissions from lead-based paint during demolition. The only source of Pb emissions from Los Angeles International Airport (LAX) is from aviation gasoline (AvGas) associated with piston-engine general aviation aircraft; however, very few, if any, piston engine aircraft fly into LAX, and AvGas is no longer stored at the fuel farm operated by LAXFUELS.

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 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,[3] 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 NOx, 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, which is beyond the scope of this analysis, and are not used for project-level reviews. Therefore, no photochemical

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1 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.

2 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.

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

O_3 modeling was conducted. Additional information regarding the six criteria pollutants that were evaluated in the air quality analysis is presented below.[4]

4.2.1.1.1 Ozone (O_3)[5]

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

4.2.1.1.2 Nitrogen Dioxide (NO_2)[6]

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).

4.2.1.1.3 Carbon Monoxide (CO)[7]

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.

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[4] California Air Resources Board, "Glossary of Air Pollution Terms," Available: http://www.arb.ca.gov/html/gloss.htm, accessed July 19, 2016.

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

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

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

4.2.1.1.4 Particulate Matter (PM_{10}) and Fine Particulate Matter ($PM_{2.5}$)[8]

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.[9] 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 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)[10] and NO_X interact with other compounds in the air to form particulate matter. In the Basin, both VOCs and ammonia are also 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.

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

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

10 The term SOx 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 SOx is emitted as SO_2, therefore SOx and $SO_2$are considered equivalent in this document and only the latter term is used henceforth.

4.2.1.1.5 Sulfur Dioxide (SO_2)[11]

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.

4.2.1.2 Scope of Analysis

The air quality analysis conducted for the proposed Project addresses construction-related and operational-related emissions. Construction emissions were quantified for each year of construction, occurring primarily between 2018[12] and 2030, and operational-related emissions for Project and Program-level elements for the years 2024 and 2035. Phase 1 of the proposed Project would include the vast majority of the proposed access/transportation-related improvements, such as the APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements, planned to be operational by 2024. Phase 2 of the Project would mainly consist of roadway improvements at the W. Century Boulevard/Sepulveda Boulevard interchange; these elements would likely be constructed by 2030; however, operations have been analyzed for the future year of 2035. In addition to a Project-level analysis, potential future related development has been analyzed at a program-level for future year 2035. The basic steps involved in the scope analysis are listed below.

4.2.1.2.1 Construction

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 thresholds for construction;
- Conduct dispersion modeling for both 2019, the estimated peak construction year, and 2020, the year containing the estimated peak construction month, of Project-related construction emissions;
- Obtain background concentration data from SCAQMD and estimate future concentrations resulting

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

12 Construction mobilization may begin in the 4th quarter of 2017; however, project construction is not anticipated to begin until 2018.

from construction of the proposed Project;

- Compare peak concentration results with appropriate CEQA thresholds and ambient air quality standards for the purpose of determining the significance of Project impacts;
- Determine level of significance of Project impacts; and
- Identify construction-related mitigation measures.

4.2.1.2.2 Operations

The scope of the evaluation of emissions once the key components of the proposed Project are completed (herein called operational emissions) was conducted to:

- Identify operational-related emission sources;
- Develop peak daily operational emissions inventories for the identified sources;
- Compare emissions inventories with appropriate CEQA thresholds for operations;
- Conduct dispersion modeling for operational emissions in 2024, when the key access/transportation system improvements are completed, and 2035, after all development within the Project site is completed and fully operational;
- Obtain background concentration data from SCAQMD and estimate future concentrations resulting from operation of the proposed Project;
- Compare peak concentration results with appropriate CEQA thresholds and ambient air quality standards for the purpose of determining the significance of Project impacts;
- Determine level of significance of Project impacts; and
- Identify operational-related mitigation measures.

4.2.1.3 Methodology

Prior to starting the detailed air quality impact analysis, Los Angeles World Airports (LAWA) prepared and presented a draft modeling protocol to SCAQMD.[13] The SCAQMD provided comments on the protocol, and a revised modeling protocol was prepared to address these comments. The revised modeling protocol (presented in Appendix F) was followed in completing the analysis described herein, with the following exception:

- The existing conditions year was updated from 2014 to 2015.

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13 Appendix F of this EIR.

4.2.1.3.1 LAX Landside Access Modernization Program Project

Emission Source Types

Construction

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, 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 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.

As further described in Chapter 2, *Description of the Proposed Project*, construction of the proposed Project would occur in two phases; Phase 1 would begin in late 2017/early 2018 and be concluded by 2023.. Phase 2 would begin in approximately 2025 and be completed by approximately 2035. For this air quality impact analysis, construction of all elements of the program, including the potential future related development, was assumed to be completed by 2030. This compressed duration is a conservative assumption because it would require more construction to occur earlier, with higher daily and annual emissions, than a schedule which would have the Project construction finishing in 2035.

Off-Road Equipment

Off-road construction equipment includes dozers, loaders, sweepers, 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 provided for each individual Project component. Equipment types with corresponding operating hours were matched with specific construction activities for each Project component. Monthly hours of operation were based on a detailed construction schedule included in Appendix F.

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).[14] Off-road exhaust emission factors for CO and SO_2 were derived from CARB's OFFROAD2007 model.[15] $PM_{2.5}$ emission factors were developed using the PM_{10} emission factors and $PM_{2.5}$ size profiles derived from the CARB-approved California Emission Inventory and Reporting System (CEIDARS).[16,17]

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.[18]

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 to and from the site. On-road off-site hauling activity, including miles per trip and number of trips were provided for each project component. On-road off-site vehicle emissions were calculated by determining total vehicle miles traveled

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14 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.

15 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.

16 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.

17 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.

18 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.

(VMT) by each type of vehicle. 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)[19], the SCAQMD's CEQA *Air Quality Handbook*[20], and documentation associated with CARB's California Emission Estimator Model (CalEEMod) emissions estimator computer program[21].

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 3850 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 assumed to reduce on-site fugitive dust emissions by 61 percent.[22]

Fugitive VOCs

A primary source of construction-related fugitive VOC emissions is hot-mix 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 0.016 pounds of VOC (from evaporation) per square foot of coated surface was used to determine VOC emissions from architectural coatings.

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19 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.

20 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.

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

22 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.

Operations

In the context of CEQA, operational emissions provide an indication of the changes in emissions that completing and operating the proposed Project would have when comparing operational emissions without the proposed Project.

As discussed in the growth-inducing impacts section of Chapter 6, *Other CEQA Considerations*, implementation of the proposed Project would not increase the number of flights or type of aircraft using the airfield because it affects only efficiency of the landside/roadway system and landside development. The proposed Project would also not result in changes to air traffic flight patterns or aircraft taxi patterns. Finally, the proposed Project would not change the number of passengers at LAX; it would only change how they access the Airport and terminal facilities. The LAX passenger activity assumed for each future year is consistent with the forecasts for LAX prepared by the Federal Aviation Administration (FAA)[23] and Southern California Association of Governments (SCAG)[24]. Therefore, the only passenger-related changes from the proposed Project would be in surface vehicle traffic patterns and vehicle trips. As a result, only surface vehicle emissions and not aircraft emissions are included in this DEIR. Stationary and area sources (including electrical production, natural gas combustion, water, and waste sources), as they relate to any of the new proposed Project facilities were also analyzed.

Daily and annual emissions were calculated for each source for the 2015 baseline (existing) conditions, 2024 With and Without the proposed Project, and 2035 With and Without the proposed Project. In addition, emissions were estimated for a 2015 With Project scenario, using 2015 activity levels and assuming the proposed Project components were installed by 2015.

Mobile Sources

For purposes of the EIR analysis, mobile sources include on-road vehicles. On-road vehicles include the automobiles, trucks, buses, and other motor vehicles that operate on the public roadways and in the parking areas at and near LAX.

No direct criteria pollutant emissions would occur from operation of the APM; rather, emissions would occur from off-Airport utility plant operations necessary to support the additional electricity demand. The method for estimating these emissions is discussed below in 'Stationary Sources."

All vehicles traveling to or from LAX were considered in the EIR analysis, including: privately-owned vehicles, government-owned vehicles, and commercially owned vehicles, such as rental cars, shuttles, buses, taxicabs, and trucks. Temporal data that identifies the vehicle volumes by hour for traffic and on-airport parking was

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23 Federal Aviation Administration, *APO Terminal Area Forecast 2014*, January 2015.

24 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.

determined from the traffic analysis, as discussed in Section 4.12, *Transportation/Traffic*, and was used for purposes of calculating emissions herein.

Assumptions for these vehicles are:

- Emissions from passenger, employee, and cargo delivery trips were calculated using Los Angeles County average fleet emission factors per mile obtained from EMFAC2014.
- VMTs were obtained from the off-Airport traffic analysis prepared for this EIR (see Appendix O).
- The emission factors were multiplied by the total annual forecast VMTs for the 2015 baseline conditions, 2024 With and Without the proposed Project, and 2035 With and Without the proposed Project.

Stationary Sources

Stationary sources include space heaters and water heaters installed in the proposed Project facilities, as well as regional power plants that would provide a portion of the incremental electricity demand associated with the proposed Project. The local heating demand emissions were estimated using CalEEMod, assuming that the ITFs, APM stations, and CONRAC would have similar heating demands as general office buildings. The proposed Project electrical demand would be provided by either grid based power (such as from the Los Angeles Department of Water and Power [LADWP]), or by small packaged utility systems installed on Project property, or by a combination of both. This analysis includes the increase in secondary emissions associated with future demands on regional power plants and/or local packaged units resulting from the net increase in electricity consumption with implementation of the proposed Project. Secondary emissions associated with electricity supplied to the Landside Access Modernization Program facilities were evaluated using USEPA and SCAQMD sources, as further described below.

Calculations for secondary emissions from electricity production associated with the proposed Project facilities assume that 37 percent of the electricity provided to the facilities would be generated within the Basin.[25] While this portion of Project-related electricity demand would be drawn from the local power generating facilities that provide electricity to the Los Angeles area and surrounding communities of Southern California, it is difficult to pinpoint any one location or type of power plant that would be the major source of power for the Project. Therefore, the secondary emissions associated with the proposed Project facilities are based on a regional emissions inventory for electricity produced in the Basin. The majority of the Basin's electric generating facilities utilize natural gas; therefore, for the purposes of this calculation, it was assumed that 100 percent of the local electricity would be generated in natural gas-fired facilities. It is acknowledged that the current mix of power sources includes renewable energy sources and that, in future years, the renewable portfolio of electrical generation within the Basin will increase. However the effect of increased renewable energy on criteria pollutant emissions has not been quantified for the EIR analysis. As a result, the analysis of

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[25] City of Los Angeles, Department of Water and Power, *2015 Power Integrated Resource Plan*, December 2015, Available: http://www.ladwp.com/powerIRP, accessed July 21, 2016.

secondary stationary source emissions for proposed Project facilities is conservative. NO_X emission rates for power generation were based on guidance provided in SCAQMD Rule 1135[26] and were based on the number of kilowatt-hours required by the proposed Project. For VOC, SO_X, CO, and PM_{10}, emission rates for external combustion of natural gas based on the number of cubic feet of gas as provided in USEPA AP-42[27] were used. For this analysis, it was assumed that $PM_{2.5}$ emissions would be the same as PM_{10}.

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 (described in more detail below and shown on Figure 4.2.1-1) 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. 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[28] and its Modeling Guidance for AERMOD.[29] To be conservative, this analysis did not calculate PM_{10} deposition, which would otherwise reduce the ambient modeled concentration of PM_{10} from the construction sources.

For construction emissions, the workday would vary by location and by the type of facility being built. Because the Airport will be operating during construction, much of the heavy overhead work in the CTA (APM guideway and APM stations) is projected to occur during early morning hours when passenger activity is lowest. Two shifts were included for the CTA work, with 65 percent of daily construction emissions occurring between approximately 1 a.m. and 9 a.m. (8 hours) and the remaining 35 percent of daily work occurring between approximately 9 a.m. and 7 p.m. (10 hours). The construction of certain portions of the APM guideway outside of the CTA will also occur in the evening, but would not need to be as late. Therefore, APM guideway work outside of the CTA is would likely occur in two shifts with 60 percent of the work occurring between approximately 7 a.m. and 3 p.m., and the remaining 40 percent of work occurring between approximately 3 p.m. and 11 p.m. Finally, all other work outside of the CTA would occur in two shifts between approximately 7 a.m. and 11 p.m., with 80 percent occurring in the first shift and 20 percent occurring in the second shift.

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26 South Coast Air Quality Management District, *Rule 1135 Emissions of Oxides of Nitrogen from Electric Power Generating Systems*, Available: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1135.pdf, accessed July 22, 2016.

27 U.S. Environmental Protection Agency, *AP 42, Compilation of Air Pollutant Emission Factors*, Fifth Edition, *Section 1.4 Natural Gas Combustion*, July 1998, Available: https://www3.epa.gov/ttnchie1/ap42/ch01/final/c01s04.pdf, accessed July 21, 2016.

28 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.

29 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 Locations

Construction activities would be located at the Project site and staging/employee parking areas. Construction staging areas have been identified in given zones around the proposed Project, as shown in Figure 2-50 of Chapter 2, *Description of the Proposed Project*.

Operational emissions occur along roadway links leading into the Airport vicinity. Operational emissions on the roadway links within approximately 5 to 6 miles of the Airport were modeled for changes in traffic patterns and volumes. Proposed Project incremental impacts were determined for each baseline considered (2015 Existing Conditions or Future Without Project). Only roadway links with an increase in volume relative to the baseline under consideration were included in each model run. For example, when determining the proposed Project impacts against the Future Without Project scenario, only the roadway links with an increase in traffic volume between the Future With Project and Future Without Project (With minus Without) were included in the modeling analysis. Note that many roadway links in the traffic model show decreases in volume due to the improvements associated with the proposed Project. These potential benefits associated with the proposed Project have not been captured in this analysis.

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.[30] 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 4.2.1-1**.

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

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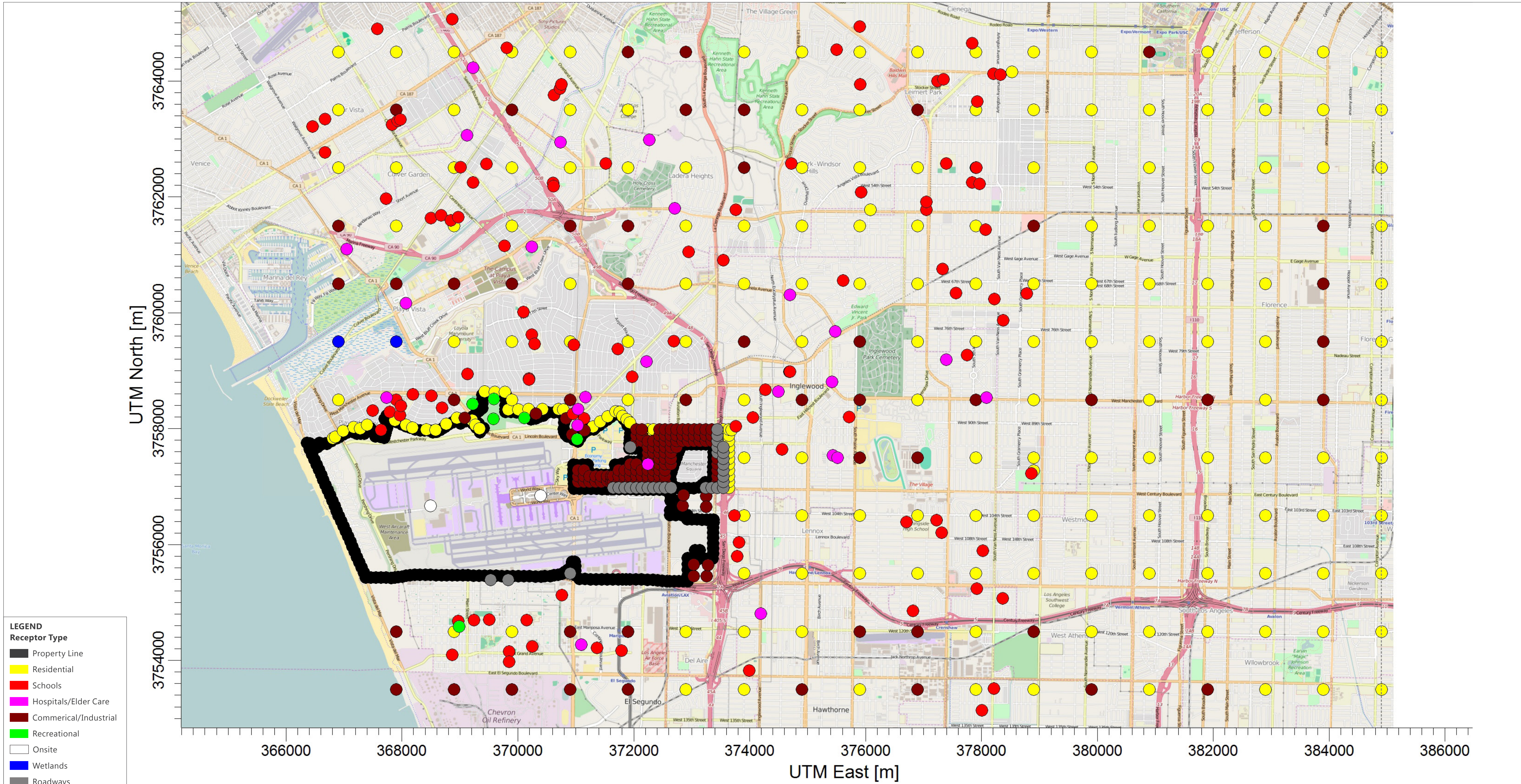

SOURCE: CDM Smith, August 2016.

FIGURE 4.2.1-1

NORTH 0 Not To Scale

Criteria Pollutant Receptor Locations

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Meteorology

The meteorological data used in the analysis were obtained from the National Climatic Data Center website, and was preprocessed using AERMET.[31,32] 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)[33] obtained using AERSURFACE.[34] AERSURFACE is a tool that provides realistic reproducible surface characteristic values, including albedo, Bowen ratio, and surface roughness length, for input into AERMET.[35] The data set used consisted of hourly surface data collected at the LAX National Weather Service station (Station 23174) for calendar year 2015; 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).

Ozone Limiting Method for NO_2 Modeling

AERMOD contains various methods for modeling the conversion of NO_x to NO_2, including the ozone limiting method (OLM) and Plume Volume Molar Ratio Method (PVMRM) options. Per the air quality modeling protocol reviewed by SCAQMD, the OLM option was used in this modeling analysis.[36] The SCAQMD provided 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/NOx Ratio: 0.90
- In-stack NO_2/NOx Ratio: 0.25 for light-duty trucks and automobiles; 0.11 for heavy-duty trucks
- Default Ozone Value: 40 parts per billion (used only for missing data in the hourly O_3 data file provided by the SCAQMD)

Screening and Refined Dispersion Analyses for Operations

As noted in the operational emissions methodology above, the primary sources of operational emissions are the vehicles traveling to and from the Airport, including those accessing the various Landside Access Modernization Project elements. Conducting the dispersion analyses for all pollutants on all of the roadway

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

32 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.

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

34 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.

35 These represent the most recent five years with complete data; the data have passed the USEPA's requirement for 90 percent completeness by quarter for wind direction, wind speed, and temperature.

36 OLM is a widely accepted approach for estimating the conversion of NO_x to NO_2 in source plumes. SCAQMD provided hourly ozone data for use in the LAMP OLM analysis.

links potentially affected by the proposed Project would require an excessive amount of time. Therefore, a screening approach was developed at the suggestion of the SCAMQD.[37] Only those roadway links with a traffic volume increase by at least one trip per day above the baseline would be used in the dispersion analysis. This screening level analysis is conservative because it does not account for the decreases in vehicle trips and the associated decreases in emissions that occur on many roadway links that are due to implementation of the proposed Project. As noted in Section 4.2.1.5.2 below, multiple baselines were used for developing the incremental impacts associated with the proposed Project. Therefore, the links selected for the screening analysis may be different for each analysis. For example, the Future With Project scenario compared to Future Without Project scenario in 2024 may have a different set of links than the Future With Project scenario compared to Future Without Project scenario in 2035.

The results of the screening analysis for each pollutant was compared to the appropriate local concentration threshold identified in Section 4.2.1.5.2. For those impacts which were determined to be less than (better than) the threshold, no additional analysis was conducted. However, if the screening analysis results were above the threshold, a refined analysis was conducted to verify the level of impact. The refined analysis included dispersion modeling of all Airport-related trips on all of the roadway links in the traffic analysis, including those links with traffic decreases between the proposed Project and the baseline. The results of the refined analysis was compared to the thresholds and reported in the sections below. The results of the screening analysis are included in Appendix F.

4.2.1.3.2 LAX Landside Access Modernization Program Potential Future Related Development

Emission inventories for 2035 conditions were calculated with the CalEEMod program for emissions from potential future related development. The types of potential future related development analyzed were:

- Office Space (General Office in CalEEMod)
- Hotel (Hotel in CalEEMod)
- Conference Center (General Office in CalEEMod)
- Restaurant/Bar, Clothing Retail Space, Food/Drug Retail Space, and Personal Care/Services (Strip Mall in CalEEMod)
- Other Development (Unrefrigerated Warehouse in CalEEMod)

Incremental emissions were developed for the potential future related development relative to 2015 baseline conditions, to 2024 Without Project conditions, and to 2035 Without Project conditions. Secondary emissions from stationary sources associated with potential future related development were calculated using CalEEMod.

37 Wong, Jillian, Ph.D., South Coast Air Quality Management District, Personal Communication, March 23, 2016.

4.2.1.4 Existing Conditions

4.2.1.4.1 Climatological Conditions[38]

The Airport is located within the 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.

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.[39]

4.2.1.4.2 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

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38 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.

39 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.

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 4.2.1-1** 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.

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 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.[40] Most recently, the Basin was also found to attain the 1997 $PM_{2.5}$ NAAQS;[41] however the Basin remains a nonattainment area for the 2006 daily and 2012 annual $PM_{2.5}$ NAAQS shown in Table 4.2.1-1. The attainment status with regard to the NAAQS is presented in **Table 4.2.1-2** for each criteria pollutant.

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[40] 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.

[41] 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, No. 142, July 25, 2016, pp. 48350-48356.

[Draft]

Table 4.2.1-1: National and California Ambient Air Quality Standards (NAAQS and CAAQS)

POLLUTANT	AVERAGING TIME	CAAQS	NAAQS PRIMARY	NAAQS SECONDARY
Ozone (O_3)	8-hour	0.070 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)	Same as Primary
	1-Hour	0.09 ppm (180 μg/m^3)	N/A	N/A
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	N/A
	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	N/A
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)	Same as Primary [1/]
	1-Hour	0.18 ppm (339 μg/m^3)	0.10 ppm (188 μg/m^3)	N/A
Sulfur Dioxide (SO_2) [2/]	Annual	N/A	0.03 ppm (80 μg/m^3)	N/A
	24-Hour	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)	N/A
	3-Hour	N/A	N/A	0.5 ppm (1300 μg/m^3)
	1-Hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)	N/A
Respirable Particulate Matter (PM_{10})	AAM	20 μg/m^3	N/A	N/A
	24-Hour	50 μg/m^3	150 μg/m^3	Same as Primary
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 μg/m^3	12.0 μg/m^3	15 μg/m^3
	24-Hour	N/A	35 μg/m^3 [10/]	Same as Primary
Lead (Pb)	Rolling 3-Month Average	N/A	0.15 μg/m^3	Same as Primary
	Monthly	1.5 μg/m^3	N/A	N/A
Visibility Reducing Particles	8-Hour	Extinction of 0.23 per kilometer	N/A	N/A
Sulfates	24-Hour	25 μg/m^3	N/A	N/A

NOTES:

NAAQS = National Ambient Air Quality Standards

CAAQS = California Ambient Air Quality Standards

ppm = parts per million (by volume)

μg/m^3 = micrograms per cubic meter

N/A = Not applicable

mg/m^3 = 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 August 5, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

Table 4.2.1-2: 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 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: http://www.arb.ca.gov/desig/adm/adm.htm, effective December 2015.

PREPARED BY: CDM Smith, July 2016.

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 4.2.1-1. The attainment status with regard to the CAAQS is presented in Table 4.2.1-2 for each criteria pollutant. CARB has been granted jurisdiction over a number of air pollutant emission sources that operate in the State. Specifically, CARB has the authority to develop emission standards for on-road motor vehicles (with EPA 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.

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.[42] 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. The Draft 2016 AQMP includes baseline emissions assumptions consistent with the 2016 RTP/SCS, approved by 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.

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. At least one of these rules is 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 VOCs from architectural coatings in solvents, which lowers the emissions of odorous compounds.

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42 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.

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 regard 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.

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.[43] 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.[44]

4.2.1.4.3 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

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43 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.

44 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.

Highway (Long Beach). The most recent data available from the SCAQMD for these monitoring stations at the time of Draft EIR preparation encompassed the years 2011 to 2015, as shown in **Table 4.2.1-3**.

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.

Respirable Particulate Matter (PM_{10}) – The highest recorded 24-hour PM_{10} concentration recorded was 46 $\mu g/m^3$ 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 $\mu g/m^3$ in 2014.

Fine Particulates ($PM_{2.5}$) – The maximum 24-hour $PM_{2.5}$ concentration recorded was 51.5 $\mu g/m^3$ in 2014. The highest arithmetic mean of 12.9 was recorded in 2015. 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.

Table 4.2.1-3: 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
98^{th} 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
99^{th} 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 Concentration 24-hr period, μg/m^3	41	31	38	46	31
Days over Federal Standard (150 μg/m^3)	0	0	0	0	0
Maximum California Concentration 24-hr period, μg/m^3	41	30	37	45	31
Days over State Standard (50 μg/m^3)	0	0	---	0	0
Annual California Concentration, μg/m^3	21.4	19.5	---	21.9	---
Exceed State Standard? (20 μg/m^3)	Yes	No	---	Yes	Yes
Fine Particulate Matter ($PM_{2.5}$) [3/]					
Federal Design Value 24-hr period, μg/m^3	30	28	27	---[4/]	---[4/]
Federal Design Value Annual period, μg/m^3	11.5	10.6	10.9	---[4/]	---[4/]
Maximum California Concentration 24-hr period, μg/m^3	39.7	49.8	47.2	51.4	48.8
Annual Federal Concentration, μg/m^3	11.3	10.4	11.3	11.4	12.9
Exceed State Standard? (12 μg/m^3)	No	No	No	No	Yes

NOTES:

AAM = Annual arithmetic mean

ppb = parts per billion (by volume)

ppm = parts per million (by volume)

μg/m^3 = micrograms per cubic meter

--- = insufficient data to determine the value

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 May 24, 2015; California Air Resources Board, AQMIS2, Available: http://www.arb.ca.gov/aqmis2/aqmis2.php, accessed May 24, 2016.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

4.2.1.4.4 Existing Airport Traffic Emissions

The existing (2015) Airport-related vehicle emissions are shown in **Table 4.2.1-4**. The vehicles included are those traveling to or from the Airport (including the CTA and west Airport parking locations) or Airport-related areas (such as rental car facilities). The focus of this table is on traffic that would most likely be affected by development of the proposed Project.

Table 4.2.1-4: Existing Airport Traffic Emissions

	PEAK DAILY EMISSIONS (LBS/DAY)					
EMISSION SOURCE	**CO**	**VOC**	**NO_X**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Automobiles	8,907	329	833	17	230	97
Trucks	613	88	1,058	2	411	127
Total	9,519	417	1,891	20	641	224

NOTE: Totals may not add exactly due to rounding.
SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

4.2.1.5 Thresholds of Significance

4.2.1.5.1 Regional Emissions Thresholds

The SCAQMD has developed CEQA construction and operational-related thresholds of significance for air pollutant emissions from projects proposed in the Basin. Construction and operational emission thresholds are summarized in **Table 4.2.1-5**. In accordance with the SCAQMD *CEQA Air Quality Handbook*, a significant air quality impact would occur if the estimated incremental increase in construction-related or operations-related emissions attributable to the proposed Project would be greater than the daily emission thresholds presented in Table 4.2.1-5.

Table 4.2.1-5: 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 12, 2015.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

Scenarios 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. Construction-related emissions attributable to the proposed Project are compared to the significance thresholds for construction. For operational-related emission increments, the following comparisons are made, as noted in the air quality modeling protocol:

- 2015 With Project to 2015 Existing Conditions: Emissions associated with the proposed Project that would have occurred in 2015 if the proposed Project had been completed in 2015 compared to the 2015 existing conditions emissions. The level of significance of Project-related emissions is determined for this scenario.
- 2024 Future With Project to 2024 Future Without Project: Emissions associated with the proposed Project that would occur in 2024 upon completion of Phase 1 components are compared to the "future without project" emissions in 2024. The level of significance of Project-related emissions is determined for this scenario.
- 2035 Future With Project to 2035 Future Without Project: Emissions from the proposed Project that would occur in 2035 after completion of Phase 2 components are compared to the "future without project" emissions in 2035. The level of significance of Project-related emissions is determined for this scenario.

In addition, the following comparisons were made for disclosure purposes only:

- 2024 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of "future with proposed Project (2024)" to 2015 existing conditions is provided. The resulting incremental emissions are compared to SCAQMD thresholds; however, the level of significance of Project-related emissions is not determined for this scenario because it includes future emissions not attributable to the proposed Project.
- 2035 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of "future with proposed Project (2035)" to 2015 existing conditions is provided. The resulting incremental emissions are compared to SCAQMD thresholds; however, the level of significance of Project-related emissions is not determined for this scenario because it includes future emissions not attributable to the proposed Project.

Assumptions associated with future conditions with and without construction of the proposed Project are identified in Section 4.12, *Transportation/Traffic,* specifically Section 4.12.2.7.1.

Scenarios Used to Determine Significance for Potential Future Related Development Emissions

For construction-related increments associated with potential future related development, a baseline of zero emissions is used. Therefore, all construction-related emissions attributable to potential future development are compared to the significance thresholds for construction. For operational-related emission increments, the following comparison is made, as noted in the air quality modeling protocol:

- 2035 Future With Program[45] to 2035 Future Without Program: Emissions with the proposed Project, including potential future related development that would occur in 2035, are compared to the "future without project" emissions in 2035. The level of significance of emissions from potential future related development is determined for this scenario.

In addition, for disclosure purposes, emissions under the 2035 Future With Program scenario including potential future related development that would occur by 2035, are compared to 2015 existing conditions. The resulting incremental emissions are compared to SCAQMD thresholds; however, the level of significance of Project-related emissions is not determined for this scenario. because it includes future emissions not attributable to the proposed Project

Assumptions associated with future conditions with and without construction of the proposed Project are identified in Section 4.12, *Transportation/Traffic,* specifically Section 4.12.2.7.2.

45 For purposes of the air quality impacts analysis, "Program" means LAMP project emissions added to future related development t emissions.

4.2.1.5.2 Local Concentration Thresholds

The SCAQMD has also developed operational and construction-related thresholds of significance[46] for air pollutant concentration impacts from projects proposed in the Basin. These thresholds are summarized in **Table 4.2.1-6**. 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 or operations-related emissions would be greater than the concentration thresholds presented in Table 4.2.1-6. 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 and Rule 1303, Table A-2, for operations as described in the *Final Localized Significance Threshold Methodology*.[47]

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.[48] For the purposes of this analysis, the local construction and operations emissions resulting from development of the proposed Project are assessed with respect to the thresholds in Table 4.2.1-6 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 (µg/m^3), and the 1-hour NO_2 NAAQS of 188 µg/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.

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46 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.

47 South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, as revised July 2008.

48 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.

[Draft]

Table 4.2.1-6: SCAQMD CEQA Thresholds of Significance for Air Pollutant Concentrations in the South Coast Air Basin

		PROJECT-RELATED CONCENTRATION THRESHOLDS		
POLLUTANT	AVERAGING PERIOD	CONSTRUCTION	OPERATIONS	PROJECT ONLY OR TOTAL
PM_{10}	Annual[1/]	1.0 µg/m^3	1.0 µg/m^3	Project Only
PM_{10}	24-hour[1/]	10.4 µg/m^3	2.5 µg/m^3	Project Only
$PM_{2.5}$	24-hour[1/]	10.4 µg/m^3	2.5 µg/m^3	Project Only
CO	1-hour[2/]	20 ppm (23 mg/m^3)	20 ppm (23 mg/m^3)	Total incl. Background
CO	8-hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	Total incl. Background
NO_2	1-hour (State)	0.18 ppm (339 µg/m^3)	0.18 ppm (339 µg/m^3)	Total incl. Background
NO_2	1-hour (Federal)[3/]	0.100 ppm (188 µg/m^3)	0.100 ppm (188 µg/m^3)	Total incl. Background
NO_2	Annual (State)[2/]	0.03 ppm (57 µg/m^3)	0.030 ppm (57 µg/m^3)	Total incl. Background
SO_2	1-hour (State)	0.25 ppm (655 µg/m^3)	0.25 ppm (655 µg/m^3)	Total incl. Background
SO_2	1-hour (Federal)[4/]	0.075 ppm (655 µg/m^3)	0.075 ppm (655 µg/m^3)	Total incl. Background
SO_2	24-hour	0.04 ppm (655 µg/m^3)	0.04 ppm (655 µg/m^3)	Total incl. Background

NOTES:

1/ The concentration thresholds for PM_{10} and $PM_{2.5}$ have been developed by SCAQMD for construction or operational 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/m^3. 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: Ricondo & Associates, Inc., October 2015.

- **SO_2** - The significance thresholds for 1-hour SO_2 concentrations are the 1-hour SO_2 CAAQS of 655 µg/m^3, and the 1-hour SO_2 NAAQS of 196 µg/m^3. 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/m^3) and 10 mg/m^3, 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. For both PM_{10} and $PM_{2.5}$, SCAQMD developed separate daily thresholds for construction, 10.4 $\mu g/m^3$, and for operations, 2.5 $\mu g/m^3$. SCAQMD also developed an annual threshold for PM_{10}, 1.0 $\mu g/m^3$, applicable to either construction or operations. These PM_{10} and $PM_{2.5}$ thresholds are relative to the project incremental impact, thus project-only concentrations were not added to background before comparing to these thresholds.

Scenarios Used to Determine Significance for Local Concentrations

The local analysis of air quality impacts associated with operation of the proposed Project compares concentrations associated with the following scenarios:

- 2024 Future With Project to 2024 Future Without Project: Concentrations associated with the proposed Project that would occur in 2024 upon completion of the proposed transportation system improvements are compared to the "future without project" concentrations in 2024. The level of significance of Project-related concentration impacts is determined for this scenario.
- 2035 Future With Project to 2035 Future Without Project: Concentrations associated with the proposed Project that would occur in 2035 upon completion of all future development at the Project site are compared to the "future without project" concentrations in 2035. The level of significance of Project-related concentration impacts is determined for this scenario.

In addition, the following comparisons were made for disclosure purposes only:

- 2024 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of "future with proposed Project (2024)" to 2015 existing conditions is provided. The resulting concentrations are compared to SCAQMD thresholds; however, the level of significance of Project-related concentrations is not determined for this scenario because it includes effects of future emissions that are not attributable to the proposed Project.
- 2035 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of "future with proposed Project (2035)" to 2015 existing conditions is provided. The resulting concentrations are compared to SCAQMD thresholds; however, the level of significance of Project-related concentrations is not determined for this scenario because it includes effects of future emissions that are not attributable to the proposed Project.

4.2.1.5.3 Determination of Background Concentrations

The background concentrations for criteria pollutants were determined using historical pollutant concentrations available from CARB.[49] 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

[49] 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.

ambient air concentrations, shown in Table 4.2.1-3 of Section 4.2.1.4.3, Existing Ambient Air Quality. For 1-hour NO_2 and SO_2 NAAQS, the background concentration was determined from the maximum consecutive three-year average of the 98th percentile (NO_2) or 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).[50] 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.[51] This approach was used for construction to address the hourly construction impacts that occur in the late evening and early morning hours.

4.2.1.6 Impact Analysis

4.2.1.6.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project. The Phase 2 Program features (potential future related development) are discussed separately. Details on modeling inputs, assumptions, and impact results are included in Appendix F.

Construction Impacts

Regional Construction Emissions

Peak daily construction-related emissions were calculated from monthly-averaged daily emissions for each month of construction associated with the proposed Project. The peak month daily emissions are presented in **Table 4.2.1-7** 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). The construction-related emissions for each month are presented in Appendix F, which presents construction assumptions for each project component.

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50 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.

51 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.

Table 4.2.1-7: Project Maximum Construction Emissions (lbs/day)

POLLUTANT	PEAK DAILY EMISSIONS	THRESHOLD	SIGNIFICANT?
Carbon monoxide, CO	340	550	No
Volatile organic compounds, VOC	106	75	**Yes**
Nitrogen oxides, NO_X	654	100	**Yes**
Sulfur dioxide, SO_2	2	150	No
Respirable particulate matter, PM_{10}	114	150	No
Fine particulate matter, $PM_{2.5}$	34	55	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As seen in Table 4.2.1-7, the regional construction emissions would be less than the SCAQMD CEQA construction emission thresholds for CO, SO_2, PM_{10}, and $PM_{2.5}$, but would exceed the thresholds for VOC and NO_X. Therefore, the proposed Project's construction emissions of VOC and NO_X are significant impacts.

Local Construction Impacts

As discussed in Section 4.2.1.3, Methodology, the local effects from the on-site[52] 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*, and *Modeling Guidance for AERMOD*. The results of air dispersion modeling of the project construction sources are summarized in **Table 4.2.1-8**.

As shown in Table 4.2.1-8, the unmitigated local construction concentrations would be less than the SCAQMD CEQA ambient air quality standards for CO, 1-hour NO_2 CAAQS, Annual NO_2 , SO_2, and $PM_{2.5}$, but would exceed the 24-hour and annual PM_{10} thresholds, and 1-hour NO_2 NAAQS. Therefore, the localized construction impacts of the proposed Project relative to NO_2 and PM_{10} emissions would be significant. NO_2 concentrations are primarily associated with the large off-road construction equipment, while PM_{10} concentrations are driven by fugitive dust.

52 For this project, "on-site" is not exclusively "on-airport", many of the Project construction sites are on streets and right-of-ways outside the Airport property lines.

[Draft]

Table 4.2.1-8: Project Peak Construction Concentrations (µg/m³)

POLLUTANT	AVERAGING PERIOD [1/]	CONSTRUCTION (µg/m³)	BACKGROUND (µg/m³)	TOTAL (µg/m³)	THRESHOLD (µg/m³) [1/]	SIGNIFICANT?
CO	1-hr CAAQS	961	3,565	4,526	23,000	No
	8-hr CAAQS	120	2,778	2,898	10,000	No
NO_2	1-hr CAAQS	126	164	290	339	No
	1-hr NAAQS	203	--[2/]	203	188	**Yes**
	Annual CAAQS	15	23	38	57	No
SO_2	1-hr CAAQS	3	39	42	655	No
	1-hr NAAQS	3	16	19	196	No
	3-hr NAAQS	2	39	41	1,300	No
	24-hr CAAQS	1	8	9	105	No
	Annual NAAQS	0	3	3	80	No
PM_{10}	24-hr	16	--[3/]	16.0	10.4	**Yes**
	Annual	3	--[3/]	3.0	1.0	**Yes**
$PM_{2.5}$	24-hr	9	--[3/]	9.2	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/ PM_{10} and $PM_{2.5}$ thresholds are project only values, therefore, are not added to background concentrations.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

Operational Emissions

Regional Operational Emissions

Based on the proposed construction schedule, as detailed in Appendix F, the vast majority of the proposed improvements associated with the proposed Project would be completed in 2023; therefore, operational impacts associated with those improvements were analyzed for the first full year of operations, 2024. The analysis of regional operational emissions presented below includes vehicular emissions, as would be influenced by implementation of the proposed Project, as well as facility space and water heating (natural gas combustion), and secondary emissions from electrical demand associated with the proposed Project.

As noted in Section 4.2.1.5, the regional analysis of air quality impacts associated with operation of the proposed access/transportation system improvements compares emissions from the following scenarios for the determination of significance of operational emissions under CEQA: (i) the 2015 With Project compared to the 2015 Existing Conditions scenario, (ii) the 2024 Future With Project compared to the 2024 Future Without Project scenario, and (iii) the 2035 Future With Project compared to the 2035 Future Without Project scenario. Additionally, the 2024 With Project and 2035 With Project scenarios were each compared to the existing conditions (2015) for informational purposes; however, the level of significance of Project-related emissions is not determined using these comparisons because the changes (reductions) in emission factors for the future scenarios relative to 2015 conditions are not attributable to the proposed Project.

Comparison of 2015 With Project and 2015 Existing Conditions

A comparison between emissions from the 2015 With Project scenario and the 2015 Existing Conditions scenario is shown in **Table 4.2.1-9**.

Table 4.2.1-9: Operational Emissions – 2015 With Project Compared to 2015 Existing Conditions

	2015 EXISTING CONDITIONS		2015 WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	3,306	18,113	3,252	17,817	-54	-296	55	No
VOC	424	2,327	420	2,301	-5	-26	55	No
PM_{10}	1,028	5,634	1,020	5,589	-8	-45	150	No
$PM_{2.5}$	348	1,908	344	1,887	-4	-21	55	No
SO_2	33	180	33	179	0	-1	150	No
CO	11,199	61,365	11,138	61,031	-61	-334	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-9, implementation of the proposed Project would decrease emissions for all criteria pollutants in 2015 compared to what would otherwise have occurred in 2015 without the proposed Project. The reduction in operational emissions is due to the reduction in VMT associated with the proposed Project improvements. The proposed Project would result in more passengers and on- or near-Airport employees using transit to travel to and from the Airport vicinity, plus it would result in the elimination of most rental car shuttles. The total emissions from operation of the proposed Project as compared to the 2015 Existing Conditions scenario would not exceed SCAQMD's thresholds for any pollutant. Therefore, the proposed Project's regional operational emissions in 2015 would be less than significant when compared to existing conditions without the Project.

Comparison of 2024 Future With Project and 2024 Future Without Project

A comparison between emissions from the 2024 Future With Project scenario and the 2024 Future Without Project scenario is shown in **Table 4.2.1-10**.

Table 4.2.1-10: Operational Emissions – 2024 Future With Project Compared to 2024 Future Without Project

	2024 FUTURE WITHOUT PROJECT		2024 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	120	659	119	652	-1	-7	55	No
VOC	25	139	25	136	0	-3	55	No
PM_{10}	144	787	138	754	-6	-33	150	No
$PM_{2.5}$	46	253	45	244	-1	-9	55	No
SO_2	3	18	3	18	0	0	150	No
CO	879	4,817	837	4,584	-42	-233	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-10, implementation of the proposed Project would decrease emissions for all criteria pollutants in 2024 compared to what would otherwise occur in 2024 without the proposed Project. The reduction in operational emissions is due to the reduction in VMT associated with the proposed Project improvements. The proposed Project would result in more passengers and on- or near-Airport employees using transit to travel to and from the Airport vicinity, and the elimination of most rental car shuttles. The total emissions from operation of the proposed Project as compared to the 2024 Future Without Project scenario would not exceed SCAQMD's thresholds for any pollutant. Therefore, the proposed Project's regional operational emissions in 2024 would be less than significant when compared to future conditions without the Project.

Comparison of 2035 Future With Project and 2035 Future Without Project

A comparison between emissions from the 2035 Future With Project scenario and the 2035 Future Without Project scenario is shown in **Table 4.2.1-11**.

Table 4.2.1-11: Operational Emissions – 2035 Future With Project Compared to 2035 Future Without Project

	2035 FUTURE WITHOUT PROJECT		2035 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	97	533	97	533	0	0	55	No
VOC	15	85	15	84	0	-1	55	No
PM_{10}	154	842	137	747	-17	-95	150	No
$PM_{2.5}$	48	265	44	238	-4	-27	55	No
SO_2	3	15	3	14	0	-1	150	No
CO	579	3,170	511	2,799	-68	-371	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

As shown in Table 4.2.1-11, implementation of the proposed Project would decrease emissions for all criteria pollutants in 2035 compared to what would otherwise occur in 2035 without the proposed Project. The reduction in operational emissions is due to the reduction in VMT associated with the proposed Project improvements. The proposed Project would result in more passengers and on- or near-Airport employees using transit to travel to and from the Airport vicinity, and the elimination of most rental car shuttles. The total emissions from operation of the proposed Project under this basis of comparison would not exceed SCAQMD's thresholds for any pollutant. Therefore, the proposed Project's regional operational emissions in 2035 would be less than significant when compared to future conditions without the Project.

Comparison of 2024 Future With Project and 2015 Existing Conditions

Table 4.2.1-12 compares, for informational purposes, the 2024 Future With Project operational emissions to 2015 existing conditions. The incremental emissions were then compared to the significance thresholds. As shown, in 2024 the proposed Project would decrease emissions for all criteria pollutants except PM_{10} and $PM_{2.5}$ compared to existing conditions. Two specific changes occur when one compares the Future With Project scenario against the Existing Conditions: (i) the VMT increases due to regional growth in population and associated vehicle travel demand, and (ii) the engine exhaust emission factors (emission rates in grams per mile) decreases as older vehicles are replaced with newer ones that comply with cleaner emission standards. Note, however, that particulate matter emissions factors for paved road dust, tire wear, and brake wear do not change with time. The decrease in engine exhaust emission factors is greater in magnitude than the increase in VMT between 2015 and 2024; therefore, the emissions of NOx, VOC, SO_2, and CO decrease when comparing the Future With Project to the Existing Conditions. Because emission factors for dust sources (road, tire and brake) do not change and VMT increases between 2015 and 2024, the PM_{10} and $PM_{2.5}$ emissions from these dust sources increases more than the reduction in PM_{10} and $PM_{2.5}$ from engine exhaust emissions. The total emissions with operation of the proposed Project in 2024 as compared to 2015 existing conditions would not exceed SCAQMD's thresholds for any pollutant.

Table 4.2.1-12: Operational Emissions - 2024 Future With Project Compared to 2015 Existing Conditions (lbs/day)

	2015 EXISTING CONDITIONS		2024 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	345	1,891	119	652	-226	-1,239	55	No
VOC	76	417	25	136	-51	-281	55	No
PM_{10}	117	641	138	754	21	113	150	No
$PM_{2.5}$	41	224	45	244	4	20	55	No
SO_2	4	20	3	18	-1	-2	150	No
CO	1,737	9,519	837	4,584	-900	-4,935	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Comparison of 2035 Future With Project and 2015 Existing Conditions

Table 4.2.1-13 compares, for informational purposes, the 2035 Future With Project operational emissions to 2015 existing conditions. The incremental emissions were then compared to the significance thresholds. As shown, in 2035 implementation of the proposed Project would decrease emissions for all criteria pollutants except PM_{10} and $PM_{2.5}$ compared to existing conditions. Similar to the 2024 to 2015 comparison above, two specific changes occur when one compares the Future With Project scenario against the Existing Conditions: (i) the VMT increases due to regional growth in population and associated vehicle travel demand, and (ii) the engine exhaust emission factors (emission rates in grams per mile) decreases as older vehicles are replaced with newer ones that comply with cleaner emission standards. Again, particulate matter emissions factors for paved road dust, tire wear, and brake wear do not change with time. The decrease in engine exhaust emission factors is greater in magnitude than the increase in VMT between 2015 and 2035; therefore, the emissions of NOx, VOC, SO_2, and CO decrease when comparing the Future With Project to the Existing Conditions. Because emission factors for dust sources (road, tire and brake) do not change and VMT increases between 2015 and 2035, the PM_{10} and $PM_{2.5}$ emissions from these dust sources increases more than the reduction in PM_{10} and $PM_{2.5}$ from engine exhaust emissions. The total emissions with operation of the proposed Project in 2035 as compared to 2015 existing conditions would not exceed SCAQMD's thresholds for any pollutant.

Table 4.2.1-13: Operational Emissions - 2035 Future With Project Compared to 2015 Existing Conditions (lbs/day)

	2015 EXISTING CONDITIONS		2035 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	345	1,891	97	533	-248	-1,358	55	No
VOC	76	417	15	84	-61	-333	55	No
PM_{10}	117	641	137	747	20	106	150	No
$PM_{2.5}$	41	224	44	238	3	14	55	No
SO_2	4	20	3	14	-1	-6	150	No
CO	1,737	9,519	511	2,799	-1,226	-6,720	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Local Operational Impacts

As discussed in Section 4.2.1.3, Methodology, the local effects from the on-site portion of daily 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*, and *Modeling Guidance for AERMOD*. The SCAQMD recommends that lead agencies perform project-specific air quality modeling for larger projects; therefore, Project-specific dispersion modeling was used to assess local operational impacts.

Comparison of 2024 Future With Project and 2024 Future Without Project

Table 4.2.1-14 delineates the incremental increases in peak concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ for the 2024 Future With Project scenario as measured against what would otherwise occur under the 2024 Future Without Project scenario. These concentration impacts were then compared to the significance thresholds for operations as presented in Table 4.2.1-6. As shown, the Project-related incremental change in pollutant concentrations resulting from operational activities associated with the proposed Project would not exceed the local operational-based thresholds at any receptors. Therefore, the proposed Project's operational local pollutant concentrations would not result in a significant impact compared to future conditions without the proposed Project.

Comparison of 2024 Future With Project and 2015 Existing Conditions

Table 4.2.1-15 delineates the incremental increases in peak concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ for the 2024 Future With Project scenario as measured against 2015 existing conditions. Although not used for significance determinations, these concentration impacts were then compared to the significance thresholds for operations as presented in Table 4.2.1-6. As shown, the Project-related incremental change in concentrations from all pollutants under this basis of comparison would not result in exceedances of the thresholds.

[Draft]

Table 4.2.1-14: Operational Concentrations - 2024 Future With Project Compared to 2024 Future Without Project

POLLUTANT	AVERAGING PERIOD [1/]	INCREMENTAL PEAK ($\mu g/m^3$) [2/, 3/]	BACKGROUND ($\mu g/m^3$)	TOTAL ($\mu g/m^3$)	THRESHOLD ($\mu g/m^3$)	SIGNIFICANT?
CO	1-hr CAAQS	55	3,565	3,620	23,000	No
	8-hr CAAQS	25	2,778	2,803	10,000	No
NO_2	1-hr CAAQS	9	164	165	339	No
	1-hr NAAQS	7	116	118	188	No
	Annual CAAQS	1	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 [4/]	39	1,300	No
	24-hr CAAQS	<1	8	8	105	No
	Annual NAAQS	<1	3	3	80	No
PM_{10}	24-hr	1.6 [5/]	-- [6/]	1.6	2.5	No
	Annual	0.7 [5/]	-- [6/]	0.7	1.0	No
$PM_{2.5}$	24-hr	0.9	-- [6/]	0.9	2.5	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 Incremental Peak concentration was determined by calculating the differences between Future With Project and Future Without Project scenarios at each receptor, then selecting the maximum value across all receptors.

3/ The incremental Peak concentrations are reported for the Screening Analysis described in Section 4.2.1.3.1, unless otherwise noted.

4/ The 3-hour SO_2 background concentration was assumed to be the same as the highest 1-hour SO_2 background concentration.

5/ PM_{10} incremental Peak concentrations are reported for the Refined Analysis described in Section 4.2.1.3.1.

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

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

[Draft]

Table 4.2.1-15: Operational Concentrations - 2024 Future With Project Compared to 2015 Existing Conditions

POLLUTANT	AVERAGING PERIOD 1/	INCREMENTAL PEAK ($\mu g/m^3$) 2/, 3/	BACKGROUND ($\mu g/m^3$)	TOTAL ($\mu g/m^3$)	THRESHOLD ($\mu g/m^3$)	SIGNIFICANT?
CO	1-hr CAAQS	180	3,565	3,745	23,000	No
	8-hr CAAQS	92	2,778	2,870	10,000	No
NO_2	1-hr CAAQS	0	164	164	339	No
	1-hr NAAQS	0	116	116	188	No
	Annual CAAQS	0	23	23	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 4/	39	1,300	No
	24-hr CAAQS	<1	8	8	105	No
	Annual NAAQS	<1	3	3	80	No
PM_{10}	24-hr	1.4	-- 5/	1.4	2.5	No
	Annual	0.7	-- 5/	0.7	1.0	No
$PM_{2.5}$	24-hr	0.4	-- 5/	0.4	2.5	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 Incremental Peak concentration was determined by calculating the differences between Future With Project and 2015 Existing Condition scenarios at each receptor, then selecting the maximum value across all receptors.

3/ The incremental Peak concentrations are reported for the Screening Analysis described in Section 4.2.1.3.1, unless otherwise noted.

4/ The 3-hour SO_2 background concentration was assumed to be the same as the highest 1-hour SO_2 background concentration.

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

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Comparison of 2035 Future With Project and 2035 Future Without Project

The incremental peak concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ for the 2035 Future With Project as measured against 2035 Future Without Project conditions are shown in **Table 4.2.1-16**. These concentration impacts were then compared to the significance thresholds for operations as presented in Table 4.2.1-6. As shown, the Project-related incremental change in annual PM_{10} concentrations resulting from operational activities associated with the proposed Project would exceed the local operational-based thresholds at nearby receptors; however, concentrations from all other pollutants would not exceed the thresholds at any of the receptors. The location of the peak PM_{10} operation impacts are just east of the Airport, along West 98th Street between Vicksburg Avenue and Airport Boulevard. The PM_{10} operational impacts are primarily associated with fugitive dust from paved road travel, tire wear, and brake wear. Therefore, the proposed Project's operational annual concentrations of PM_{10} would result in a significant impact compared to future conditions without the proposed Project.

Comparison of 2035 Future With Project and 2015 Existing Conditions

Table 4.2.1-17 delineates the incremental differences in peak concentrations of CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ for the 2035 Future With Project scenario as measured against 2015 existing conditions. Although not used for significance determinations, these concentration impacts were then compared to the significance thresholds for operations as presented in Table 4.2.1-6. As shown, the Project-related incremental change in concentrations from all pollutants under this basis of comparison would not result in exceedances of the thresholds.

4.2.1.6.2 LAX Landside Access Modernization Program Potential Future Related Development

The impacts discussed below provide a program-level analysis of the potential future related development components. Further project-level environmental review under CEQA will be required in the future before any of these components can be implemented by LAWA and/or independent developers as projects are identified for implementation.

Construction Impacts

Regional Construction Emissions

This section analyzes the estimated emissions from potential future related development of the proposed Project. Peak daily construction-related emissions were calculated from monthly averaged daily emissions for each month of construction of the potential future related development. The peak month daily emissions are presented in **Table 4.2.1-18** 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). The daily emissions for each month of potential future related development construction are presented in Appendix F, which presents construction assumptions.

[Draft]

Table 4.2.1-16: Operational Concentrations - 2035 Future With Project Compared to 2035 Future Without Project

POLLUTANT	AVERAGING PERIOD [1/]	INCREMENTAL PEAK ($\mu g/m^3$) [2/, 3/]	BACKGROUND ($\mu g/m^3$)	TOTAL ($\mu g/m^3$)	THRESHOLD ($\mu g/m^3$)	SIGNIFICANT?
CO	1-hr CAAQS	40	3,565	3,605	23,000	No
	8-hr CAAQS	18	2,778	2,796	10,000	No
NO_2	1-hr CAAQS	12	164	176	339	No
	1-hr NAAQS	10	116	126	188	No
	Annual CAAQS	2	23	25	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 [4/]	39	1,300	No
	24-hr CAAQS	<1	8	8	105	No
	Annual NAAQS	<1	3	3	80	No
PM_{10}	24-hr	2.3 [5/]	-- [6/]	2.3	2.5	No
	Annual	1.2 [5/]	-- [6/]	1.2	1.0	**Yes**
$PM_{2.5}$	24-hr	1.0	-- [6/]	1.0	2.5	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 Incremental Peak concentration was determined by calculating the differences between Future With Project and 2015 Existing Condition scenarios at each receptor, then selecting the maximum value across all receptors.

3/ The incremental Peak concentrations are reported for the Screening Analysis described in Section 4.2.1.3.1, unless otherwise noted.

4/ The 3-hour SO_2 background concentration was assumed to be the same as the highest 1-hour SO_2 background concentration.

5/ PM_{10} incremental Peak concentrations are reported for the Refined Analysis described in Section 4.2.1.3.1.

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

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Table 4.2.1-17: Operational Concentrations - 2035 Future With Project Compared to 2015 Existing Conditions

POLLUTANT	AVERAGING PERIOD [1/]	INCREMENTAL PEAK ($\mu g/m^3$) [2/, 3/]	BACKGROUND ($\mu g/m^3$)	TOTAL ($\mu g/m^3$)	THRESHOLD ($\mu g/m^3$)	SIGNIFICANT?
CO	1-hr CAAQS	89	3,565	3,654	23,000	No
	8-hr CAAQS	42	2,778	2,820	10,000	No
NO_2	1-hr CAAQS	0	164	164	339	No
	1-hr NAAQS	0	116	116	188	No
	Annual CAAQS	0	23	23	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[4/]	39	1,300	No
	24-hr CAAQS	<1	8	8	105	No
	Annual NAAQS	<1	3	3	80	No
PM_{10}	24-hr	0	--[5/]	0.0	2.5	No
	Annual	<0[6/]	--[5/]	<0 [6/]	1.0	No
$PM_{2.5}$	24-hr	0.2	--[5/]	0.2	2.5	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 Incremental Peak concentration was determined by calculating the differences between Future With Project and 2015 Existing Condition scenarios at each receptor, then selecting the maximum value across all receptors.

3/ The incremental Peak concentrations are reported for the Screening Analysis described in Section 4.2.1.3.1, unless otherwise noted.

4/ The 3-hour SO_2 background concentration was assumed to be the same as the highest 1-hour SO_2 background concentration.

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

6/ PM_{10} annual concentration increments were less than zero at all receptors, due to substantial reductions in engine exhaust PM_{10} emission rates between 2015 and 2035.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Table 4.2.1-18: Potential Future Related Development – Peak Day Construction Emissions (lbs/day)

POLLUTANT	PEAK DAILY EMISSIONS	THRESHOLD	SIGNIFICANT?
Carbon monoxide, CO	111	550	No
Volatile organic compounds, VOC	50	75	No
Nitrogen oxides, NO_X	112	100	**Yes**
Sulfur dioxide, SO_2	1	150	No
Respirable particulate matter, PM_{10}	28	150	No
Fine particulate matter, $PM_{2.5}$	10	55	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As seen in Table 4.2.1-18, the regional construction emissions associated with potential future related development would be less than the construction emission significance thresholds for CO, VOC, SO_2, PM_{10}, and $PM_{2.5}$. However, regional construction emissions associated with potential future related development would exceed the construction emission significance threshold for NO_X. Therefore the potential future related development construction emissions of NO_X are a significant impact.

Local Construction Impacts

As discussed in Section 4.2.1.3, Methodology, the local effects from the on-site portion of daily emissions were evaluated at nearby sensitive receptor locations that could be affected by the potential future related development consistent with the methodologies in the SCAQMD's *Final Localized Significance Threshold Methodology*, and *Modeling Guidance for AERMOD*. The results of the air dispersion modeling of the construction sources associated with the potential future related development are summarized in **Table 4.2.1-19**.

As seen in Table 4.2.1-19, the local construction concentrations due to potential future related development would be less than the SCAQMD CEQA ambient air quality standards for CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$. Therefore, the potential future related development construction concentrations of criteria pollutants are a less than significant impact.

[Draft]

Table 4.2.1-19: Potential Future Related Development - Peak Construction Concentrations (μg/m³)

POLLUTANT	AVERAGING PERIOD [1/]	CONSTRUCTION (μg/m³)	BACKGROUND (μg/m³)	TOTAL (μg/m³)	THRESHOLD (μg/m³)	SIGNIFICANT?
CO	1-hr CAAQS	227	3,565	3,792	23,000	No
	8-hr CAAQS	28	2,778	2,806	10,000	No
NO_2	1-hr CAAQS	94	164	258	339	No
	1-hr NAAQS	165	--[2/]	165	188	No
	Annual CAAQS	0	23	23	57	No
SO_2	1-hr CAAQS	1	39	40	655	No
	1-hr NAAQS	1	16	17	196	No
	3-hr NAAQS	0	39	39	1,300	No
	24-hr CAAQS	0	8	8	105	No
	Annual NAAQS	0	3	3	80	No
PM_{10}	24-hr	3	--[3/]	3	10.4	No
	Annual	1	--[3/]	0.8	1.0	No
$PM_{2.5}$	24-hr	2	--[3/]	2.1	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/ PM_{10} and $PM_{2.5}$ thresholds are project only values, therefore, are not added to background concentrations.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Operational Emissions

Regional Operational Emissions

This section analyzes the estimated emissions from the implementation of the potential future related development. The analysis assumes that the potential future related development would be fully implemented by 2035. The analysis presented below compares emissions from the 2035 Future With Project (including potential future related development) scenario to the 2035 Future Without Project scenario. Additionally, while not used for significance determinations, the 2035 Future With Project (including potential future related development) scenario was compared to 2015 existing conditions for informational purposes; however, the level of significance of future With Project emissions is not determined using these comparisons because future With Project scenarios include emissions not attributable to the proposed Project.

Comparison of 2035 Future With Potential Future Related Development and 2035 Future Without Project

Table 4.2.1-20 compares the 2035 Future With Project (including potential future related development) operational emissions and the 2035 Future Without Project operational emissions.

Table 4.2.1-20: Operational Emissions – 2035 With Project (Including Potential Future Related Development) Compared to 2035 Without Project

	DAILY OPERATIONAL EMISSIONS (LBS/DAY)					
OPERATIONAL SOURCE	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Incremental Change between 2035 With Project and 2035 Without Project [1/]	-1	0	-371	-1	-95	-27
Potential Future Related Development [2/]						
Office Space	13	15	60	<1	17	5
Hotel	11	9	34	<1	9	3
Conference Center	5	5	20	<1	6	2
Restaurant/Bar	16	30	131	<1	26	8
Clothing Retail Space	4	6	29	<1	7	2
Other Development	4	6	25	<1	6	2
Food/Drugs Retail Space	6	10	47	<1	10	3
Personal Care/Services	3	4	18	<1	5	2
Total Potential Future Related Development	*60*	*83*	*362*	*2*	*83*	*24*
TOTAL PROGRAM EMISSIONS (LBS/DAY)	**59**	**83**	**-9**	**1**	**-12**	**-3**
SCAQMD CEQA THRESHOLD	55	55	550	150	150	55
EXCEEDS THRESHOLD?	Yes	Yes	No	No	No	No

NOTES:

1/ Proposed Project incremental traffic emissions in 2035 obtained from Table 4.2.1-11 in Section 4.2.1.6.1.

2/ Potential Future Related Development emissions are average daily emissions.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-20, implementation of the proposed Project without the potential future related development (identified as the incremental change between 2035 With Project and 2035 Without Project in the table) would decrease emissions for all criteria pollutants in 2035 compared to what would otherwise occur in 2035 without the Project. Even with the estimated emission increases from the potential future related development, operational emissions from the associated with the 2035 Future With Project (including potential future related development) scenario would not exceed SCAQMD's thresholds for CO, SO_2, PM_{10}, and $PM_{2.5}$. However, future operation of the proposed Project, including potential future related development, would increase operational emissions such that total emissions associated with the 2035 Future With Project (including potential future related development) scenario would exceed SCAQMD's thresholds for VOC and NO_X. The operational VOC emissions are primarily from consumer product use and architectural coating, while the operational NOx emissions are almost exclusively from motor vehicles used by the patrons and employees of the potential future related development facilities. Therefore, the total emissions of VOC and NOx associated with potential future related development are a significant impact when compared to future conditions without the Project.

Comparison of 2035 Future With Potential Future Related Development and 2015 Existing Conditions

Table 4.2.1-21 compares the 2035 Future With Project (including potential future related development) operational emissions to 2015 existing conditions.

Table 4.2.1-21: Operations Emissions - 2035 Future With Potential Future Related Development Compared to 2015 Existing Conditions (lbs/day)

	DAILY OPERATIONAL EMISSIONS (LBS/DAY)					
OPERATIONAL SOURCE	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Incremental Change between 2035 With Project and 2015 Existing Conditions[1/]	-333	-1,358	-6,720	-6	106	14
Potential Future Related Development [2/]						
Office Space	13	15	60	<1	17	5
Hotel	11	9	34	<1	9	3
Conference Center	5	5	20	<1	6	2
Restaurant/Bar	16	30	131	<1	26	8
Clothing Retail Space	4	6	29	<1	7	2
Other Development	4	6	25	<1	6	2
Food/Drugs Retail Space	6	10	47	<1	10	3
Personal Care/Services	3	4	18	<1	5	2
Total Potential Future Related Development	*60*	*83*	*362*	*2*	*83*	*24*
TOTAL PROGRAM EMISSIONS (LBS/DAY)	**-273**	**-1,275**	**-6,358**	**-4**	**189**	**38**
SCAQMD CEQA THRESHOLD	55	55	550	150	150	55
EXCEEDS THRESHOLD?	No	No	No	No	Yes	No

NOTES:

1/ Proposed Project incremental traffic emissions in 2035 obtained from Table 4.2.1-13 in Section 4.2.1.6.1.

2/ Potential Future Related Development emissions are average daily emissions.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-21, implementation of the proposed Project without the potential future related development (identified as the incremental change between 2035 With Project and existing conditions in the table) would decrease emissions of VOC, NO_X, CO, and SO_2 in 2035 compared to 2015 existing conditions. Even with the estimated emission increases from the potential future related development, emissions from the Project (including potential future related development) would not exceed SCAQMD's thresholds for VOC, NO_X, CO, SO_2, and $PM_{2.5}$. However, future operation of the proposed Project, including potential future related development, would exceed SCAQMD's threshold for PM_{10}.

Local Operational Concentrations

Project-level local operational impacts (ambient concentrations) from the potential future related development projects were not developed for this analysis. This analysis is not feasible due to the uncertainty in the type of facilities that might be built, the exact location of these facilities, and the timing of actual operations. However, based on the regional impact analysis, future operation of the proposed Project, including potential future related development, could result in exceedance of local concentration thresholds for several pollutants. Therefore, local operational impacts of future related development would be significant.

4.2.1.6.3 Cumulative Impacts

A list of past, present, and reasonably foreseeable probable future projects whose construction could overlap with construction of the proposed Project are provided in **Table 4.2.1-22** 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 are provided in Appendix F. Due to the uncertainty of the multiple project schedules, the SCAQMD construction thresholds in tons per quarter were used.

[Draft]

Table 4.2.1-22 (1 of 2): Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)

CUMULATIVE DEVELOPMENT PROJECTS DURING CONSTRUCTION	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
N/A Landside Access Modernization Program [1/]	7.5	2.1	18.4	<1	1.8	0.9
1. South Terminal Improvements	0.59	0.25	0.76	0.01	0.10	0.05
2. LAX Bradley West Project	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
3. Terminal 1 Improvements	2.2	0.2	1.5	<1	0.2	0.1
4. West Aircraft Maintenance Area Project	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
5. Runway 6R-24L Runway Safety Area Improvements-North Airfield	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
6. Runway 7L-25R Runway Safety Area Improvements-South Airfield	65.5	6.7	15.3	2.9	1.9	0.6
7. Metro Crenshaw/LAX Transit Corridor and Station	4.9	1.0	8.8	<1	1.0	0.6
8. LAX Midfield Satellite Concourse (MSC) North Project	35.0	3.6	12.5	<1	9.5	2.2
9. Hyperion Treatment Plant Connector	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
10. Miscellaneous Projects and Improvements	23.9	6.4	32.3	<1	4.2	1.7
11. Terminal 2 Improvements	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
12. Runway 7R-25L Rehabilitation	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
13. MSC North Extension [3/]	3.5	0.4	1.3	<1	1	0.2
14. Northside Development	8.1	4.1	1.6	<1	1.0	0.4
15. Terminal 3 Improvements	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
16. City Los Angeles Bureau of Sanitation Stormwater Infiltration and Treatment Facility	11.3	1.0	6.0	0.0	1.5	0.7
17. Terminal 1.5	1.0	1.5	1.2	<1	0.3	0.2
18. Terminal 3 (T-3) Connector	0.5	0.2	0.6	<1	0.1	0.0
19. Canine Facility/Airport Police Department Range	--[6/]	--[6/]	--[6/]	--[6/]	-[6/]	--[6/]
20. Secured Area Access Post (SAAP) Project	1.3	0.2	1.8	<1	0.2	0.2
21. Terminals 2 and 3 Modernization Project	9.9	2.8	8.5	<1	4.4	1.9
22. Airport Police Station Relocation	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]	--[2/]
23. Concourse 0 [5/]	2.3	0.5	5.6	<1	2.6	0.4
24. MSC South Project	3.5	0.4	1.3	<1	1	0.2
25. North Airfield Safety Improvements [4/]	6.8	1.4	16.3	<1	10.9	1.5
Total from Other Construction Projects Emissions	86.8	19.1	81.4	<1	30.7	7.4
Total Cumulative Construction Project Emissions	**104.2**	**24.0**	**108.3**	**<1**	**36.9**	**10.2**

Table 4.2.1-22 (2 of 2): Cumulative Construction Projects Peak Quarter Emissions Estimates (tons/quarter)

CUMULATIVE DEVELOPMENT PROJECTS DURING CONSTRUCTION	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
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 2018 to 2030.

2/ Based on the anticipated construction schedule, this project is not anticipated to 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.

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, *Los Angeles International Airport (LAX) Terminal 1.5 Project Initial Study-Proposed Mitigated Negative Declaration*, July 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: Ricondo & Associates, Inc., July 2016.

As shown in Table 4.2.1-22, 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.

The SCAQMD has provided guidance on an acceptable approach to addressing the cumulative impacts issue for air quality.[53] 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."

Construction of the proposed Project would exceed the Project-specific significance construction emission thresholds for NO_X, as shown in Tables 4.2.1-7 and 4.2.1-19 (with potential future related development), and for VOC as shown in Table 4.2.1-7; and would exceed the Project-specific construction concentration threshold for PM_{10}, as shown in Table 4.2.1-8. As a result, the contribution of the proposed Project to cumulative construction-related impacts would be cumulatively considerable for VOC, NO_X, and PM_{10}.

53 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.

Operations of the proposed Project would not exceed the Project-specific significance thresholds for any of the pollutants when comparing 2015 With Project to the 2015 Existing Conditions (shown in Table 4.2.1-9), 2024 Future With Project scenario to the 2024 Future Without Project scenario (shown in Table 4.2.1-10), or when comparing the 2035 Future With Project scenario to the 2035 Future Without Project scenario (shown in Table 4.2.1-11). However, the operational emissions associated with the potential future related development combined with proposed Project emissions would exceed the operational thresholds for CO, VOC, NOx, PM_{10}, and $PM_{2.5}$. As a result, the contribution of the proposed Project to cumulatively significant operational impacts would be cumulatively considerable for all of the analyzed criteria air pollutants except SO_2.

4.2.1.7 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.[54] To achieve this commitment, LAWA has developed standard control measures as mitigation measures which would be applied to the proposed Project.

The following Standard Control Measures are proposed as mitigation measures to reduce significant impacts to air quality.

- **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 4.2.1-23.** Measures 1e, 1o, and 1p listed in the table were incorporated into the post-mitigation modeling (see Section 4.2.1.8.1 for modeling assumptions associated with these measures). However, the extent to which the remaining measures would reduce air quality impacts is not quantifiable; therefore, no estimate of the air quality benefit (i.e., emission reductions) of these measure is made in this analysis.

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54 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.

[Draft]

Table 4.2.1-23 (1 of 3): 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	Prior to final occupancy, the contractor shall demonstrate that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.	Fugitive Dust
1c	All roadways, driveways, sidewalks, etc., being installed as part of the project 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.	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.) 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 shall be conducted annually to determine what constitutes a best available emissions control device.	Off-Road Mobile
1f	Pave all construction access roads at least 100 feet onto the site from the main road.	Fugitive Dust
1g	To the extent feasible, have construction employees work/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.	On-Road Mobile
1i	Utilize on-site rock crushing facility, when feasible, during construction 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
1k	Suspend use of all construction equipment during a second-stage smog alert in the immediate vicinity of LAX.	Mobile and Stationary
1l	Prohibit tampering with construction equipment to increase horsepower or to defeat emission control devices.	Mobile and Stationary
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 PM10 and NOx. Contractor requirements to utilize such on-road haul trucks or the next cleanest vehicle available will be subject to the provisions of LAWA Air Quality Control Measure 1q below.	On-Road Mobile
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

[Draft]

Table 4.2.1-23 (2 of 3): Construction-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
	The on-road haul truck and off-road construction equipment requirements set forth in Standard Air Quality 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: o 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. o 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. o 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. o 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. o 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.	

Table 4.2.1-23 (3 of 3): Construction-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
1q	(continued; see Table A, Table B and notes below) Nothing in the above shall require an emissions control device (i.e., VDECS) that does not meet OSHA standards.	On-Road Mobile, & Off-Road Mobile

Table A
Off-Road Compliance Step Down Schedule*

Compliance Alternative	Engine Standard	CARB-verified DECS (VDECS)
1	Tier 4 interim	N/A**
2	Tier 3	Level 3
3	Tier 2	Level 3
4	Tier 1	Level 3
5	Tier 2	Level 2
6	Tier 2	Level 1
7	Tier 3	Uncontrolled
8	Tier 2	Uncontrolled
9	Tier 1	Level 2
** 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.		
Equipment less than Tier 1, Level 2 shall not be permitted.		

Table B
On-Road Compliance Step Down Schedule*

Compliance Alternative	Engine Model Year	CARB-verified DECS (VDECS)
1	2007	N/A**
2	2004	Level 3
3	1998	Level 3
4	2004	Uncontrolled
5	1998	Uncontrolled
** 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.		
Equipment with a model year earlier than Model Year 1998 shall not be permitted.		

* 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.

NOTES:

NQ = Not Quantified

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

- **LAX-AQ-2 – Transportation-Related Air Quality Control Measures.** This measure applies to mass transit, surface traffic, and on-site parking facilities. These measures provide infrastructure or policies that encourage the use of alternative modes of transportation or alternative fueled vehicles by airport passengers and employees. Specific measures are identified in **Table 4.2.1-24**. Because the airport does not directly control the mode choice or vehicle selection by passengers or employees, no estimate of the air quality benefit (i.e., emissions reduction) of the measures related specifically to vehicle travel is made in this analysis. However, the benefits associated with Measure 2f were evaluated in the post-mitigation modeling (see Section 4.2.1.8.1 for modeling assumptions associated with this measure).

Table 4.2.1-24: Transportation-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
2a	Provide free parking and preferential parking locations for ultra-low emission vehicles/super low emission vehicles/zero emission vehicles (ULEV/SULEV/ZEV) in all (including employee) LAX lots; provide free charging stations for ZEV; include public outreach to reduce air emissions from automobiles accessing airport parking.	Parking
2b	Develop measures to reduce air emissions of vehicles in line to exit parking lots such as pay-on-foot (before getting into car) to minimizing idle time at parking check out, including public outreach.	Parking
2c	Implement on-site circulation plan in parking lots to reduce time and associated air emissions from vehicles circulating through lots looking for parking.	Parking
2d	Promote "best-engine" technology for rental cars using on-airport rent-a-car facilities to reduce vehicle air emissions.	Clean Vehicle Fleets
2e	Consolidate non-rental car shuttles using SULEV/ZEV engines to reduce vehicle air emissions.	Clean Vehicle Fleets/Trip Reduction
2f	Cover, if feasible, any parking structures that receive direct sunlight, to reduce volatile emissions from vehicle gasoline tanks; and install solar panels on these roofs where feasible to supply electricity or hot water to reduce power production demand and associated air emissions at utility plants.	Energy Conservation
2g	Incorporate quick entry and exit parking systems in the project level design of new parking lots/structures.	Parking
2h	Include advanced signage in the design of new parking structures that could advise airport users of available parking spaces within the structure.	Parking

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

- **LAX-AQ-3 – Operations-Related Air Quality Control Measure.** The principle feature of this measure is the conversion of operational equipment to low and ultra-low emission technology (e.g., electric, fuel cell, and other future low-emission technologies). Because the penetration of electric equipment into the market cannot be determined, no estimate of the air quality benefit (i.e., emission reductions) of the operations-related control measure is made in this analysis. LAWA shall implement the specific measure identified in **Table 4.2.1-25**.

Table 4.2.1-25: Operations-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
3d	LAWA will promote the use of electric lawn mowers and leaf blowers, as these units become available for commercial use, for landscape maintenance associated with the proposed project.	General

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

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 Measures (Mitigation Measures) LAX-AQ-1, LAX-AQ-2, and LAX-AQ-3, 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.

- **MM-AQ (LAMP)-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, to the extent feasible. Renewable diesel fuel is available locally and has been shown to reduce criteria pollutant and greenhouse gas emissions from diesel engines.[55]

Also, Mitigation Measure MM-GHG (LAMP)-1, Incorporate Solar Energy into Landside Access Modernization Program Facilities, identified in Section 4.5, *Greenhouse Gas Emissions,* would reduce criteria pollutant emissions associated with Project-related operational electrical demand.

4.2.1.8 Impacts After Mitigation

4.2.1.8.1 LAX Landside Access Modernization Program Project

Mitigated Construction Impacts

As detailed in Section 4.2.1.7, 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 (LAMP)-1 would require the use of renewable diesel fuel in construction equipment and trucks. 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

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

provide a conservative 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, NOx, 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 NOx, CO, PM_{10}, and $PM_{2.5}$. The estimated effect of these control measures are shown in the tables below.

Mitigated Regional Construction Emissions

Mitigated daily emissions are presented in **Table 4.2.1-26** for all criteria and precursor pollutants studied (CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$). As shown, with inclusion of mitigation measures, short-term emissions of VOC and NO_X would remain significant.

Table 4.2.1-26: Project - Maximum Construction Emissions (lbs/day), with Mitigation

POLLUTANT	PEAK DAILY EMISSIONS	THRESHOLD	SIGNIFICANT?
Carbon monoxide, CO	293	550	No
Volatile organic compounds, VOC	83	75	**Yes**
Nitrogen oxides, NO_X	381	100	**Yes**
Sulfur dioxide, SO_2	2	150	No
Respirable particulate matter, PM_{10}	84	150	No
Fine particulate matter, $PM_{2.5}$	16	55	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Mitigated Local Construction Impacts

The results of air dispersion modeling of the project construction sources, incorporating mitigation, are summarized in **Table 4.2.1-27**.

Table 4.2.1-27: 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 NAAQS	185	--1/	185	188	No
PM_{10}	24-hr	13	--2/	13.0	10.4	**Yes**
	Annual	3	--2/	2.8	1.0	**Yes**

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/ PM10 thresholds are project only values, therefore, are not added to background concentrations.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-27, by incorporating measures included in Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (LAMP)-1, significant NO_2 impacts, specifically impacts associated with the 1-hour NAAQS standards, would be mitigated to a level that is less than significant. Construction-related annual concentrations of PM_{10} would remain significant.

Mitigated Operational Emissions

As detailed in the Section 4.2.1.7, the proposed Project would incorporate solar power generation as a means of reducing regional emissions due to electrical requirements of the proposed Project's operations. Mitigation Measure MM-GHG (LAMP)-1 would require the proposed Project to incorporate solar power generation totaling a minimum of 5.70 megawatts in AC output capacity (MW_{AC}). This measure was quantified as a reduction of 10,200 megawatt hours (MWh) from the total operational electrical power demand of the proposed Project in 2024, and assumes a decrease in power generating efficiency at a rate of 1 to 2 percent per year thereafter. The inclusion of solar electrical generation would reduce annual operational emissions due to the generation of electricity by approximately 12 percent, as shown in the tables below.

Mitigated Regional Operational Emissions

Comparison of 2024 Future With Project and 2024 Future Without Project

A comparison between emissions from the 2024 Future With Project scenario, including mitigation, and the 2024 Future Without Project scenario is shown in **Table 4.2.1-28**. As noted in Section 4.2.1.6, impacts of the unmitigated 2024 Future With Project would not result in significant operational emissions when compared to the 2024 Future Without Project scenario. As shown in Table 4.2.1-28, implementation of the proposed Project with mitigation would further decrease emissions for all criteria pollutants in 2024 compared to what would otherwise occur in 2024 without the proposed Project. Therefore, the proposed Project's regional operational emissions with mitigation in 2024 would remain less than significant when compared to future conditions without the Project.

Table 4.2.1-28: Mitigated Operational Emissions – 2024 Future With Project Compared to 2024 Future Without Project

	2024 FUTURE WITHOUT PROJECT		2024 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	120	659	118	645	-2	-14	55	No
VOC	25	139	24	135	-1	-4	55	No
PM_{10}	144	787	138	753	-6	-34	150	No
$PM_{2.5}$	46	253	45	243	-1	-10	55	No
SO_2	3	18	3	18	0	0	150	No
CO	879	4,817	834	4,569	-45	-248	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Comparison of 2024 Future With Project and 2015 Existing Conditions

Table 4.2.1-29 compares, for informational purposes, the 2024 Future With Project operational emissions, including mitigation, to 2015 existing conditions. As noted in Section 4.2.1.6, impacts of the unmitigated 2024 Future With Project would not result in significant operational emissions when compared to the 2015 existing conditions. As shown in Table 4.2.1-29, implementation of the proposed Project with mitigation would reduce emissions for all criteria pollutants, except SO_2, relative to the unmitigated 2024 Future With Project conditions. Therefore, the proposed Project's regional operational emissions with mitigation in 2024 would remain less than significant when compared to 2015 existing condition emissions.

Table 4.2.1-29: Mitigated Operational Emissions - 2024 Future With Project Compared to 2015 Existing Conditions (lbs/day)

	2015 EXISTING CONDITIONS		2024 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	345	1,891	118	645	-227	-1,246	55	No
VOC	76	417	24	135	-52	-282	55	No
PM_{10}	117	641	138	753	21	112	150	No
$PM_{2.5}$	41	224	45	243	4	19	55	No
SO_2	4	20	3	18	-1	-2	150	No
CO	1,737	9,519	834	4,569	-903	-4,950	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

[Draft]

Comparison of 2035 Future With Project and 2035 Future Without Project

A comparison between emissions from the 2035 Future With Project scenario, including mitigation, and the 2035 Future Without Project scenario is shown in **Table 4.2.1-30**. As noted in Section 4.2.1.6, impacts of the unmitigated 2035 Future With Project would not result in significant operational emissions when compared to the 2035 Future Without Project scenario. As shown in Table 4.2.1-30, implementation of the proposed Project with mitigation would further decrease emissions for all criteria pollutants in 2035 compared to what would otherwise occur in 2035 without the proposed Project. Therefore, the proposed Project's regional operational emissions with mitigation in 2035 would remain less than significant when compared to future conditions without the Project.

Table 4.2.1-30: Mitigated Operational Emissions – 2035 Future With Project Compared to 2035 Future Without Project

	2035 FUTURE WITHOUT PROJECT		2035 FUTURE WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	97	533	96	527	-1	-6	55	No
VOC	15	85	14	83	-1	-2	55	No
PM_{10}	154	842	137	746	-17	-96	150	No
$PM_{2.5}$	48	265	44	237	-4	-28	55	No
SO_2	3	15	3	14	0	-1	150	No
CO	579	3,170	508	2,786	-71	-384	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Comparison of 2035 Future With Project and 2015 Existing Conditions

Table 4.2.1-31 compares, for informational purposes, the 2035 Future With Project operational emissions, with mitigation, to 2015 existing conditions. As noted in Section 4.2.1.6, impacts of the unmitigated 2035 Future With Project would not result in significant operational emissions when compared to the 2015 existing conditions. As shown in Table 4.2.1-31, implementation of the proposed Project with mitigation in 2035 would remain less than significant when compared to 2015 existing condition emissions.

Table 4.2.1-31: Mitigated Operations Emissions - 2035 Future With Project Compared to 2015 Existing Conditions (lbs/day)

	2015 EXISTING CONDITIONS		2035 WITH PROJECT		INCREMENTAL CHANGE		THRESHOLD	
POLLUTANT	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(TPY)	(LBS/DAY)	(LBS/DAY)	SIGNIFICANT?
NO_X	345	1,891	96	527	-249	-1,364	55	No
VOC	76	417	14	83	-62	-334	55	No
PM_{10}	117	641	137	746	20	105	150	No
$PM_{2.5}$	41	224	44	237	3	13	55	No
SO_2	4	20	3	14	-1	-6	150	No
CO	1,737	9,519	508	2,786	-1,229	-6,733	550	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Mitigated Local Operational Pollutant Concentration Impacts

The mitigation measure that was quantified for operations was the inclusion of solar panels (Standard Control Measure (Mitigation Measure) LAX-AQ-2, Item 2f/Mitigation Measure MM-GHG (LAMP)-1), totaling a minimum of 5.70 MW_{AC}. This measure reduces the regional electrical demand, thus reducing the secondary emissions discussed in Section 4.2.1.6.1 under Regional Operational Emissions. However, these utility plant emissions have little impact on the vicinity around the Airport. In the discussion of mitigation measures in Section 4.2.1.7, under Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3, it was noted that the benefits of the majority of the transportation-related measures (with the exception of Measure 2f) and of the operations-related control measure were not determined. Therefore, the mitigated local operational impacts would be the same as those for unmitigated impacts shown in Tables 4.2.1-14 and 15. Localized annual PM_{10} impacts in 2035 would not be reduced to less than significant levels.

4.2.1.8.2 LAX Landside Access Modernization Program Potential Future Related Development

Mitigated Construction Impacts

Mitigated Regional Construction Emissions

The total daily emissions are presented in **Table 4.2.1-32** for all criteria and precursor pollutants studied (CO, VOC, NO_X, SO_2, PM_{10}, and $PM_{2.5}$). As shown, mitigated construction-related daily emissions of NO_X would no longer exceed SCAQMD regional significance thresholds. Therefore, construction emissions from the potential future related development, with mitigation, would be less than significant for all criteria pollutants.

Table 4.2.1-32: Potential Future Related Development - Maximum Construction Emissions, with Mitigation (lbs/day)

POLLUTANT	PEAK DAILY EMISSIONS	THRESHOLD	SIGNIFICANT?
Carbon monoxide, CO	90	550	No
Volatile organic compounds, VOC	46	75	No
Nitrogen oxides, NOx	90	100	No
Sulfur dioxide, SO_2	1	150	No
Respirable particulate matter, PM_{10}	20	150	No
Fine particulate matter, $PM_{2.5}$	6	55	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Mitigated Local Construction Pollutant Concentration Impacts

The results of the air dispersion modeling of potential future related development are summarized in Table 4.2.1-19. As shown in Table 4.2.1-19, concentrations from construction activities without mitigation would not exceed the localized concentration-based thresholds for any criteria pollutant for construction of the potential future related development. Therefore, potential future related development construction emissions would be less than significant impact after mitigation as well.

Mitigated Operational Emissions

Mitigated Regional Operational Emissions

Comparison of 2035 Future With Project (Including Potential Future Related Development) Mitigated Emissions and 2035 Future Without Project Emissions

Table 4.2.1-33 compares the 2035 Future With Project (including potential future related development) operational emissions, including Standard Control Measure (Mitigation Measure) LAX-AQ-2, Item 2f/Mitigation Measure MM-GHG (LAMP)-1, and the 2035 Future Without Project operational emissions. In the discussion of mitigation measures in Section 4.2.1.7, under Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3, it was noted that the benefits of the majority of the transportation-related measures (with the exception of Measure 2f) and of the operations-related control measure were not determined.

Table 4.2.1-33: Mitigated Operational Emissions – 2035 With-Project (Including Potential Future Related Development) Compared to 2035 Without Project

	DAILY OPERATIONAL EMISSIONS (LBS/DAY)					
OPERATIONAL SOURCE	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Incremental Change between 2035 With Project and 2035 Without Project [1/]	-2	-6	-384	-1	-96	-28
Potential Future Related Development [2/]						
Office Space	12	12	49	0	12	4
Hotel	11	8	29	0	6	2
Conference Center	4	4	16	0	4	1
Restaurant/Bar	15	25	116	0	18	8
Clothing Retail Space	4	5	24	0	5	1
Other Development	3	4	21	0	4	1
Food/Drugs Retail Space	6	8	41	0	7	2
Personal Care/Services	2	3	15	0	3	1
Total Potential Future Related Development	*58*	*69*	*311*	*1*	*60*	*18*
TOTAL PROGRAM EMISSIONS (LBS/DAY)	**56**	**63**	**-73**	**0**	**-36**	**-10**
SCAQMD CEQA THRESHOLD	55	55	550	150	150	55
EXCEEDS THRESHOLD?	Yes	Yes	No	No	No	No

NOTES:

1/ Proposed Project incremental traffic emissions in 2035 obtained from Table 4.2.1-30 in Section 4.2.1.8.1.

2/ Potential Future Related Development emissions are average daily emissions.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-33, VOC and NOx emissions would be reduced with mitigation measure implementation. However, VOC and NOx emissions under future operation of the proposed Project, including potential future related development, in 2035 compared to the 2035 Future Without Project would remain as significant impacts.

Comparison of 2035 Future With Project (Including Potential Future Related Development) Mitigated Emissions and 2015 Existing Conditions

Table 4.2.1-34 compares the 2035 Future With Project (including potential future related development) operational emissions to 2015 existing conditions.

[Draft]

Table 4.2.1-34: Mitigated Operations Emissions - 2035 Future With Project (Including Potential Future Related Development) Compared to 2015 Existing Conditions (lbs/day)

	DAILY OPERATIONAL EMISSIONS (LBS/DAY)					
OPERATIONAL SOURCE	**VOC**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Incremental Change between 2035 With Project and 2015 Existing Conditions [1/]	-334	-1,364	-6,733	-6	105	13
Potential Future Related Development [2/]						
Office Space	12	12	49	0	12	4
Hotel	11	8	29	0	6	2
Conference Center	4	4	16	0	4	1
Restaurant/Bar	15	25	116	0	18	8
Clothing Retail Space	4	5	24	0	5	1
Other Development	3	4	21	0	4	1
Food/Drugs Retail Space	6	8	41	0	7	2
Personal Care/Services	2	3	15	0	3	1
Total Potential Future Related Development	*58*	*69*	*311*	*1*	*60*	*18*
TOTAL PROGRAM EMISSIONS (LBS/DAY)	**-276**	**-1,295**	**-6,422**	**-5**	**165**	**31**
SCAQMD CEQA THRESHOLD	55	55	550	150	150	55
EXCEEDS THRESHOLD?	No	No	No	No	Yes	No

NOTES:

1/ Proposed Project incremental traffic emissions in 2035 obtained from Table 4.2.1-31 in Section 4.2.1.8.1.

2/ Potential Future Related Development emissions are average daily emissions.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

As shown in Table 4.2.1-34, mitigated implementation of the proposed Project without the potential future related development (identified as the incremental change between the 2035 Proposed Project and existing conditions in the table) would reduce emissions of PM_{10} in 2035 compared to 2015 existing conditions. However, future operation of the proposed Project, including potential future related development, would increase operational emissions such that total emissions associated with the 2035 Future With Project (including potential future related development) scenario would exceed SCAQMD's thresholds for PM_{10}.

Mitigated Local Operational Pollutant Concentration Impacts

Based on the regional emissions analysis, the potential future related development may exceed local concentrations thresholds for several pollutants. As shown in Table 4.2.1-33, even with mitigation measure implementation, future operation of the proposed Project, including potential future related development, would increase operational emissions such that total emissions associated with the 2035 Future With Project (including potential future related development) scenario would exceed SCAQMD's thresholds for VOC, NO_X, CO, PM_{10}, and $PM_{2.5}$. Additional project-level mitigation measures for these impacts would be developed when specific projects are proposed and undergo project-level CEQA review.

4.2.1.9 Level of Significance After Mitigation

4.2.1.9.1 LAX Landside Access Modernization Program Project

Construction Significance

Regional Construction Significance

With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (LAMP)-1, construction-related significant impacts associated with regional emissions would be reduced, but not to a level that would be less than significant or less than cumulatively considerable, specifically for VOC and NO_X emissions. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Therefore, impacts to regional air quality from Project-related construction emissions would be significant and unavoidable.

Local Construction Significance

With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (LAMP)-1, construction-related significant impacts associated with local concentrations would be reduced, but not to a level that would be less than significant or less than cumulatively considerable, specifically for PM_{10}. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Therefore, impacts to local air quality from Project-related construction concentrations would be significant and unavoidable.

Operational Significance

Regional Operational Emissions Significance

With implementation of Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3 and Mitigation Measure MM-GHG (LAMP)-1, operations-related significant impacts associated with regional emissions would be reduced, but not to a level that would be less than significant, specifically for VOC, NO_X, and CO emissions under the hypothetical assumption that the proposed Project had been completed in 2015 and the activities had reached future (2024 and 2035) levels in 2015. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Therefore, impacts to regional air quality associated with Project-related operational emissions would be significant and unavoidable.

Local Operational Pollutant Concentration Significance

With implementation of Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3 and Mitigation Measure MM-GHG (LAMP)-1, operations-related significant impacts associated with local concentrations would be reduced, but not to a level that would be less than significant, specifically for annual PM_{10} in 2035. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Therefore, impacts to local air quality associated with Project-related operational concentrations would be significant and unavoidable.

4.2.1.9.2 LAX Landside Access Modernization Program Potential Future Related Development

Construction Significance

Regional Construction Emissions Significance

With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (LAMP)-1, construction-related significant impacts to regional emissions would be reduced to a level that would be less than significant for the potential future related development.

Local Construction Pollutant Concentration Significance

With implementation of Standard Control Measure (Mitigation Measure) LAX-AQ-1 and Mitigation Measure MM-AQ (LAMP)-1, construction-related significant impacts to Local Concentrations would be reduced to a level that would be less than significant for the potential future related development.

Operational Significance

Regional Operational Emissions Significance

With implementation of Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3 and Mitigation Measure MM-GHG (LAMP)-1, operations-related significant impacts to regional emissions would be reduced, but not to a level that would be less than significant, specifically for VOC, NO_X, and PM_{10}. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Therefore, impacts to regional air quality would be significant and unavoidable.

Local Operational Pollutant Concentration Significance

With implementation of Standard Control Measures (Mitigation Measures) LAX-AQ-2 and LAX-AQ-3 and Mitigation Measure MM-GHG (LAMP)-1, operations-related significant impacts to local concentrations would be reduced. Based on the regional emissions analysis, the potential future related development may exceed local concentrations thresholds for several pollutants. No other feasible mitigation measures have been identified at this time that would reduce impacts to air quality further. Mitigation measures will be identified and applied to the potential future related development when individual projects undergo project-level CEQA review.

4.2.2 HUMAN HEALTH RISK ASSESSMENT

4.2.2.1 Introduction

As discussed in Chapter 2, *Description of the Proposed Project*, the proposed Project would relieve traffic congestion within the Central Terminal Area (CTA) and on the surrounding street network, improve access options and the travel experience for passengers, and provide connection to the Metro rail system. Such changes would result in alterations to the amounts of toxic air contaminants (TAC) released by vehicles and stationary sources. TAC would also be released during construction. Differences in TAC releases from construction activities and operations 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 and operations associated with the proposed Project. The HHRA and health impact analysis disclose whether the proposed Project would increase 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 is anticipated to take approximately 14 years, starting in late 2017 and with most elements completed by 2030; some portions of the Project including the potential future related development may extend through to 2035. For purposes of this analysis, to be conservative, it was assumed that all construction would be completed by 2030. Based on current construction phasing plans, the bulk of the construction activities that would increase TAC emissions (i.e., demolition and regrading) would occur within the first 5 years of construction, although construction activities are expected to span the entire 14-year period. Operation of the first completed components of the proposed Project (e.g., APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements) is anticipated to start in 2024. Although the remaining components of the proposed Project (mainly roadway improvements) are anticipated to be completed by 2030 (i.e., end of construction), the analysis of the future condition is for 2035.

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. Further, completion of construction projects results in changes to emissions during typical airport operations, because such projects are designed to make operations more efficient and hence less polluting. Finally, emissions from all sources will change with time and by location. Regional sources are subject to efforts to improve air quality in the Los Angeles 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. These complexities require an approach that examines incremental impacts to air quality.

Incremental risks are assessed in three ways for this assessment:

- A baseline for air quality in LAX environs was established for operations in 2015. This baseline, represents incremental impacts to air quality for airport operations in the absence of the proposed Project. This baseline is the threshold against which predicted effects of Project construction are compared.
- Changes to operations associated with completion of the proposed Project was also separately established. After construction is complete, predicted changes to operational impacts were compared to 2015 baseline to judge the long-term impact of the proposed Project.
- Construction emissions were estimated using construction schedules prepared for staging the project. Construction is not part of typical operations. Thus, prior to ground breaking on the proposed Project, construction emissions are zero. As construction goes on, emissions associated with this activity add incrementally to total airport emissions, and contribute fractionally to TAC in air from non-airport sources.

No investigation or modeling of non-airport sources, the fourth source of TAC in air at and near LAX was conducted. California EPA 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.

The separate analyses described allow multiple comparisons of air quality impacts to assess possible health impacts:

- Comparison of air quality impact for baseline 2015 conditions with regional air quality from MATES IV provides an estimate of incremental contributions of current LAX operations.
- Comparison of air quality impacts for baseline 2015 conditions to operational emissions after completion of the proposed Project provides a measure of how Project completion affects operational emissions.
- Comparison of air quality impacts for baseline 2015 conditions with estimated impacts of construction emissions provides a measure of the increment to total impacts during the period of construction.
- Comparison of regional air quality as measured in the MATES IV study with construction and operational 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 human health risk assessment (HHRA) in detail. **Appendix F** provides further details.

4.2.2.1.1 Pollutants of Interest

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

In addition to TAC emissions, as discussed in Section 4.2.1.6, the proposed Project (including potential future related development) would lead to significant increases in mass emissions of criteria pollutants, Proven scientific methods are not available to correlate these increases in criteria pollutant mass emissions to project-specific health impacts on specific sensitive receptors.

However, SCAQMD developed the local significance thresholds listed in Table 4.2.1-6 to represent the maximum emissions from a project that would not cause or contribute to exceedance of federal or state ambient air quality standards, which in turn were developed to protect public health. As discussed in Section 4.2.1.6, construction and operation of the proposed Project, including potential future related development, would exceed localized concentration thresholds for PM_{10}. The health risks of particulate concentrations in general have been taken into consideration by the ARB and USEPA in complex health risk assessments used to establish the CAAQS and NAAQS. By definition, persons exposed to exceedances of these ambient standards are at risk of the adverse health impacts of PM_{10} described in Section 4.2.1.1.4. Given the limitations of the localized particulate dispersion modeling, it is not possible to directly and accurately correlate potential increases in PM_{10} standards violations to project-specific health impacts (e.g., number of cases of decreased lung function).

4.2.2.1.2 Scope of Analysis

The HHRA conducted for the proposed Project addresses construction-related and operational-related emissions. Cancer risks as well as chronic and acute non-cancer health hazard assessments all depend on estimating TAC concentrations in air. These concentrations are used to estimate the amount of TAC that people living, working or going to school near LAX might inhale over both short (acute) and long (chronic) time frames.

Estimated emission rates were used, along with meteorological and geographic information, as inputs to an air dispersion model. The dispersion model predicted possible concentrations of TAC released during proposed Project construction and operations 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 4.2.1.2 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 emissions profiles to speciate total VOC and PM_{10} estimates into individual elements and compounds (specie). For example, if total VOC at a given location was 0.1 microgram per cubic meter (μg/m^3) and a given volatile TAC makes up 1 percent of this total, the concentration of that TAC at that location would be 0.001 μg/m^3.

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

- Construction-related TAC emissions were modeled for each year of construction using the schedule for proposed Project construction activities and anticipated 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.
- Proposed Project operations were modeled for conditions in 2024 and in 2035. These cutoff years are based on construction completion and startup of the APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements in 2024 and 2035 when all components of proposed Project are expected to be in operation.
- Baseline conditions were modeled using data collected for operations during 2015 and assumptions concerning emissions rates from aircraft, vehicles and stationary sources. This information is the best current information on which to estimate baseline conditions.
- Proposed Project annual concentrations between 2024 and 2035 were linearly interpolated, and concentrations after 2035 were assumed to be the same as 2035. California EPA guidance requires that impacts to health be evaluated for 30-year exposure duration. Project construction is scheduled to begin in late 2017, meaning that the HHRA for cancer risks should cover a time period to 2046.

Short-term (1-hour and 8-hour) concentrations and annual average concentrations for baseline conditions[2] were subtracted from short-term concentrations and annual average concentrations for the proposed Project, respectively, to estimate incremental project-related impacts. Incremental short-term 1-hour concentrations were then used to estimate acute non-cancer health hazard impacts, and incremental annual average concentrations were used to estimate cancer risk and chronic non-cancer health hazards using methods described in Appendix F.

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1 AERMOD was developed by USEPA specifically for the estimation of concentrations of airborne chemicals released from point, mobile and/or area sources.

2 Operational baseline conditions for significance are Future Without Project conditions. Construction baseline conditions are essentially zero – no construction would occur without the proposed Project; therefore, construction increments were modeled directly without subtracting any baseline. A comparison to existing (2015) conditions is presented for disclosure purposes.

This approach allows for incremental impacts to be either positive (adverse) or negative (beneficial). For example, if emissions following completion of the Project are reduced due to factors such as replacement of diesel-fueled equipment, better traffic patterns, and cleaner burning fuels and engines, incremental impacts would be negative – that is, air quality would improve.

4.2.2.1.3 Exposure Concentrations

TAC concentrations were estimated at dozens 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.

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.[3] 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 built into an Excel spreadsheet to allow for customization of the calculations to address Project-specific criteria and for the ease of conducting multiple iterations of calculations. HARP2 equations are described in detail in Appendix F.

4.2.2.1.4 Overview of Risk Assessment

This HHRA is based on estimates for construction and operational TAC emissions associated with the proposed Project. Baseline construction emissions are assumed to be zero; that is, no other on-Airport construction is assumed while the proposed Project is constructed. Incremental impacts of construction are therefore additive to impacts due to operations as defined by 2015 baseline conditions. Cumulative impacts, including possible impacts of airport and non-airport related construction, are discussed separately.

Emissions sources during construction were analyzed for each construction year from 2017 through 2030. Operational emissions were analyzed for 2024 and 2035 with and without the proposed Project, as well as for 2015 baseline conditions in order to determine the incremental impact. Year 2024 was chosen as the first year in which proposed Project changes to airport operations would be realized. Year 2035 is the last year for which operations projections are available.

The HHRA followed State and, as necessary, federal guidance[4] for performance of risk assessments and was conducted in four steps described above as defined in South Coast Air Quality Management District

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[3] 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.

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

(SCAQMD), CalEPA, and United States Environmental Protection Agency (USEPA) guidance[5,6,7] consisting of selection of TAC of concern, exposure assessment, toxicity assessment, and risk characterization. These steps are summarized below. Details of the risk assessment methodology are provided in Appendix F.

Selection of TAC of Concern

In general, TAC of concern for the HHRA are based on TAC identified under California 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. 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.

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. 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 4.2.2-1**.

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, off-Airport child residents, and off-Airport school children. 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.

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5 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.

6 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; 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; 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; 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; 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.

7 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 Fina*l, EPA/540/1-89/002, December 1989.

Table 4.2.2-1: 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

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith., September 2016.

The EIR's approach to assessing health risks is protective of all receptors. The range of risks and hazards for areas surrounding LAX thus provide information to the community concerning impacts at locations where they live, work 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, school children) 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 airport–related TAC. Note that, based on the 2015 OEHHA Guidance methodology for calculating chronic non-cancer hazard indices, the hazard calculation for school children would not be different than the calculation for child residents. Thus, chronic non-cancer hazard indices were not calculated separately for school children. Separate calculations were included only for cancer risks for school children.

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[8] (see LAX Master Plan Final EIR Technical Report 14a and Technical Report S-9a).[9] 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.

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8 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), April 2004.

9 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), April 2004

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 4.2.2-1. To maintain consistency with regulatory guidance, toxicity information from previous HHRA efforts were updated from 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 risk assessments.

Acute RELs developed by the State of California were used in the characterization of acute non-cancer health hazards associated with the proposed Project. 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[10] were used to characterize cancer risks and chronic non-cancer health hazards associated with longer-term inhalation of emissions from construction and 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 F.

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[11] 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.

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10 California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Toxicity Criteria Online Database, Available: http://oehha.ca.gov/chemicals.

11 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.

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; a 12-year period for off-site school children; 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 2030. 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, and incremental cancer risks for the years following construction were calculated using TAC concentrations from emissions from operations. For the period from 2024 through 2030, TAC concentrations from emissions from operations were added to the TAC concentrations from emissions from construction for all years after the 2024 horizon year when operations of the first completed components of the proposed Project (e.g., APM, the CONRAC, the ITF West, the ITF East, and most of the roadway improvements) were assumed to commence. After construction is projected to be completed (the period from 2031 to 2035), incremental cancer risks were calculated using TAC concentrations from emissions from only operations. For exposure periods that extend beyond 30 years, 2035 horizon year TAC concentrations were used for post-2035 exposure years.

TAC concentrations for operations were modeled for two horizon years – 2024 and 2035. For calculation of cancer risks for horizon year 2024, TAC concentrations were assumed to decrease linearly for 11 years from the 2024 horizon year to the 2035 horizon year and then remain constant at the 2035 TAC concentrations for the remainder of the exposure period. This is a conservative assumption because reduced emissions from fleet turnover to newer vehicles and the use of reformulated gasoline as well as the implementation of state and local regulations and programs targeted to mitigate emissions are likely to result in decreases in future emissions past 2035.

Combined construction and operational impacts were calculated as the sum of impacts for four exposure periods. Only construction impacts were assessed for the first 7 years of the project (2017 through 2024). For the next 7 years (2024 through 2030), construction and operational impacts were summed, using the appropriate years of the linear extrapolation between years 2024 and 2035 to evaluate operations, Between 2030 and 2035, only operational impacts are assessed, again using the appropriate years of the linear extrapolation between years 2024 and 2035. Finally, from 2035 on, operations only are included based on estimated 2035 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 estimates exaggerate risks for most people living, working, 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 4.2.1, *Air Quality*). 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-worker TAC concentrations for operational emissions. For off-Airport locations, land uses were designated as either residential, commercial, 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 and school children 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 **Figures 4.2.2-1** and **4.2.2-2**.

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 4.2.1, *Air Quality.* 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, live, or attend school 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. An increased incremental cancer risk greater than, or equal to, 10 in one million (10×10^{-6}) for potentially exposed off-site workers, residents, or school children was considered a significant impact. Cancer risks were based on an exposure duration of 30 years. 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.

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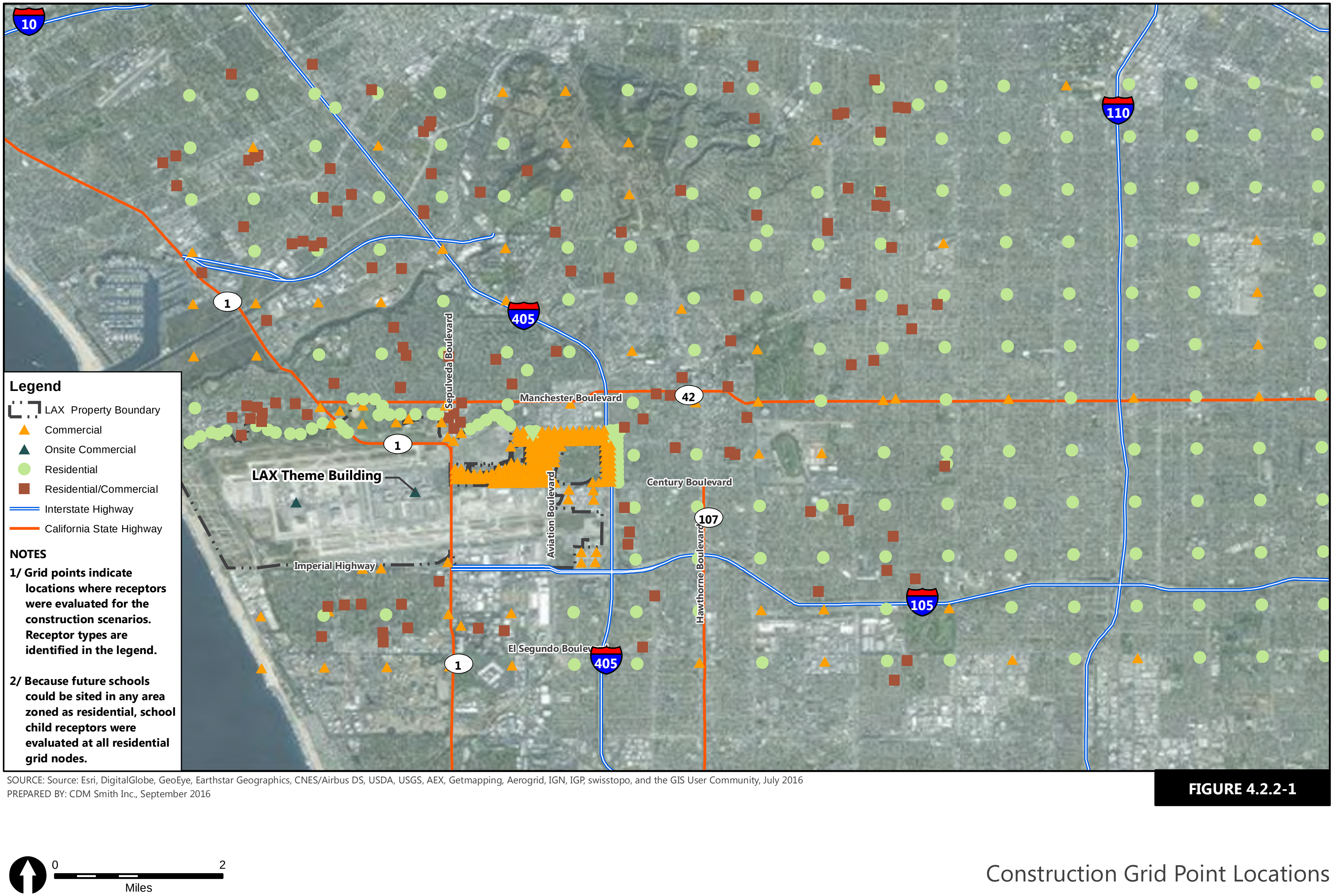

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-1

Construction Grid Point Locations

[Draft]

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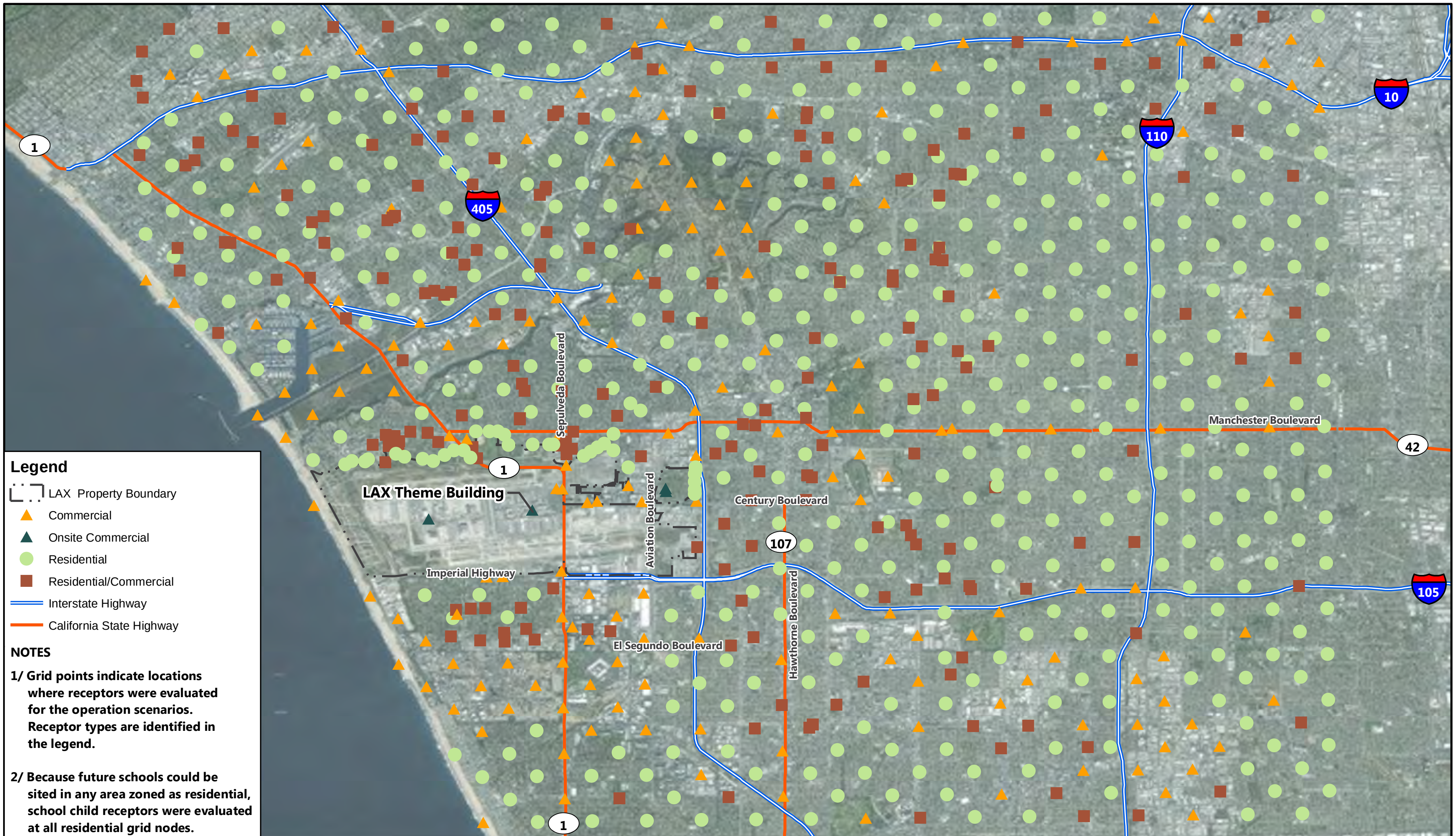

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-2

0 2 Miles

Operation Grid Point Locations

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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).[12]

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 airport emissions, the chance of a single case of cancer in this population caused by airport emissions would be 1 in 100 (100,000 times 10 x 10^{-6}).

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[12] 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.

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 was exposed to the emissions for a lifetime (70 years).

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 parameter assumptions, toxicity assessment, use of 2015 OEHHA Air Toxics Methodology[13] instead of Risk Assessment Guidance for Superfund (RAGS)[14] methodology, and interactions among acrolein and

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[13] 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.

[14] 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.

criteria pollutants. Detailed discussions of these uncertainties associated with the HHRA are presented in Appendix F. 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.

4.2.2.2 Existing Conditions

4.2.2.2.1 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 0 and Tier 1) began on March 1, 2009; however, CARB is not enforcing this part of the regulation until "it receives authorization from USEPA."[15] Implementation of the fleet averaging emission standards is staggered based on fleet size, with the largest operators to begin compliance in 2015.[16] 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.[17]

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.

4.2.2.2.2 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

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15 State of California, Office of Administrative Law, "California Regulatory Notice Register, February 26, 2010," Available: http://www.oal.ca.gov/res/docs/pdf/notice/9z-2010.pdf, accessed November 2013.

16 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 2013.

17 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.

several times; the most recent study, MATES-IV,[18] 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.

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.[19] 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

18 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.

19 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.

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.[20]

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 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 4.2.1, *Air Quality*). 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.

4.2.2.3 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[21] incremental impact to human health would occur if changes in operations following implementation of the proposed Project would result in one or more of the following conditions:

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20 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 9, 2014.

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

- An increased incremental cancer risk[22] greater than, or equal to, 10 in one million (10×10^{-6}) for potentially exposed off-site workers, residents, or school children.
- 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[23] 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.[24] Thresholds for workers are based on standards developed by CalOSHA.

4.2.2.4 Impact Analysis

4.2.2.4.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project including the potential future related development. Because the HHRA is a study of long-term exposure and risks to human health, all components of the proposed Project including future potential related development were analyzed together. Air concentrations for TAC for construction and operational sources 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, school children, and off-airport workers at locations where air concentrations for TAC were predicted. Appendix F provides detailed health risk modeling data supporting the impact analyses.

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

23 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.

24 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 3, 2016.

Construction

For the construction scenario, 550 grid points were analyzed within the study area in the vicinity of the Airport for each construction year from 2017 to 2030. These locations are shown on Figure 4.2.2-1. In addition, risks and hazards for operations were added to the construction risks and hazards, for construction years 2024 to 2030.

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, commercial, and student receptors. These calculations assumed that people live, work, and go to school 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, go to school and participate in other activities outside of the study area.

Cancer Risks

Peak construction-related cancer risks for MEI are presented in **Table 4.2.2-2** and summarized in the following sections; calculations are presented in Appendix F. As shown, unmitigated construction-related cancer risks would be significant for adult and child residents, and school children.

Table 4.2.2-2: 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	**23**	10	**Yes**
Child Resident, 9 years	**54**	10	**Yes**
School Child, 12 years	**13**	10	**Yes**
Adult Worker, 25 years	3	10	No

SOURCE: CDM Smith, July 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Residents (Adult and Child)

For construction-related cancer risks, adult and child residents were evaluated at 333 residential and residential/commercial grid nodes[25]. Because construction of the proposed Project is estimated to be 14 years, incremental cancer risk for adult residents was estimated assuming 14 years of construction and with operation overlapping the construction starting in 2024; following completion of construction, it was assumed that adult residents were exposed to operations for the remaining 16 years of the 30-year exposure period.

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

Since the exposure period for a child resident is 9 years, which is less than the 14-year construction scenario, the cancer risk for child residents was calculated over several periods within the 14-year time frame to determine which period would result in the maximum cancer risk for the child resident. It was determined that the maximum cancer risk for a child resident would occur for the 9-year exposure period from 2019 to 2027 for the unmitigated construction scenario.

Incremental cancer risk for an adult resident at the peak location during construction is estimated to be 23 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (94 percent) followed by hexavalent chromium, contributing 4 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 4.2.2-3**.

Incremental cancer risk for a child resident at the peak location during construction is estimated to be 54 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (91 percent) followed by hexavalent chromium, contributing 6 percent. The peak cancer risk location for child residents is shown on **Figure 4.2.2-4**.

School Child

Receptor locations for school children were conservatively evaluated at all 333 residential and residential/commercial locations assuming that schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations, and school sites must meet LAUSD criteria before a public school can be established. However, evaluating all possible locations within the study area that might be used for schools in the future is well beyond the scope of this assessment. As calculated, the assessment will provide risk information for the future should school sites within the study area be considered.

For construction-related cancer risks, school children were evaluated for a 12-year exposure scenario. Because construction of the project is estimated to be 14 years, incremental cancer risk for the school child was estimated assuming 12 years of construction, with years of operation overlapping the construction starting in 2024. Calculations indicated that the peak 12-year exposure period for the school child was 2019 to 2030.

Incremental cancer risks for children attending schools at the peak location were estimated to be 13 in one million, exceeding the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (88 percent) followed by hexavalent chromium, contributing 9 percent. The peak cancer risk location is shown on **Figure 4.2.2-5**.

Grid locations that were evaluated include all residential or residential/commercial locations s because schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations. The closest existing school with peak cancer risks would be Oak Street Elementary School. During the construction period, peak cancer risks at the existing Oak Street Elementary School are estimated to be 8 in one million, below the threshold of significance of 10 in one million. The location of Oak Street Elementary School is shown on Figure 4.2.2-5. Since the school is an elementary school that provides instruction for children from kindergarten through sixth grade (i.e., 7 years), actual exposure for the school child would be less than the 12-year exposure scenario that was modeled.

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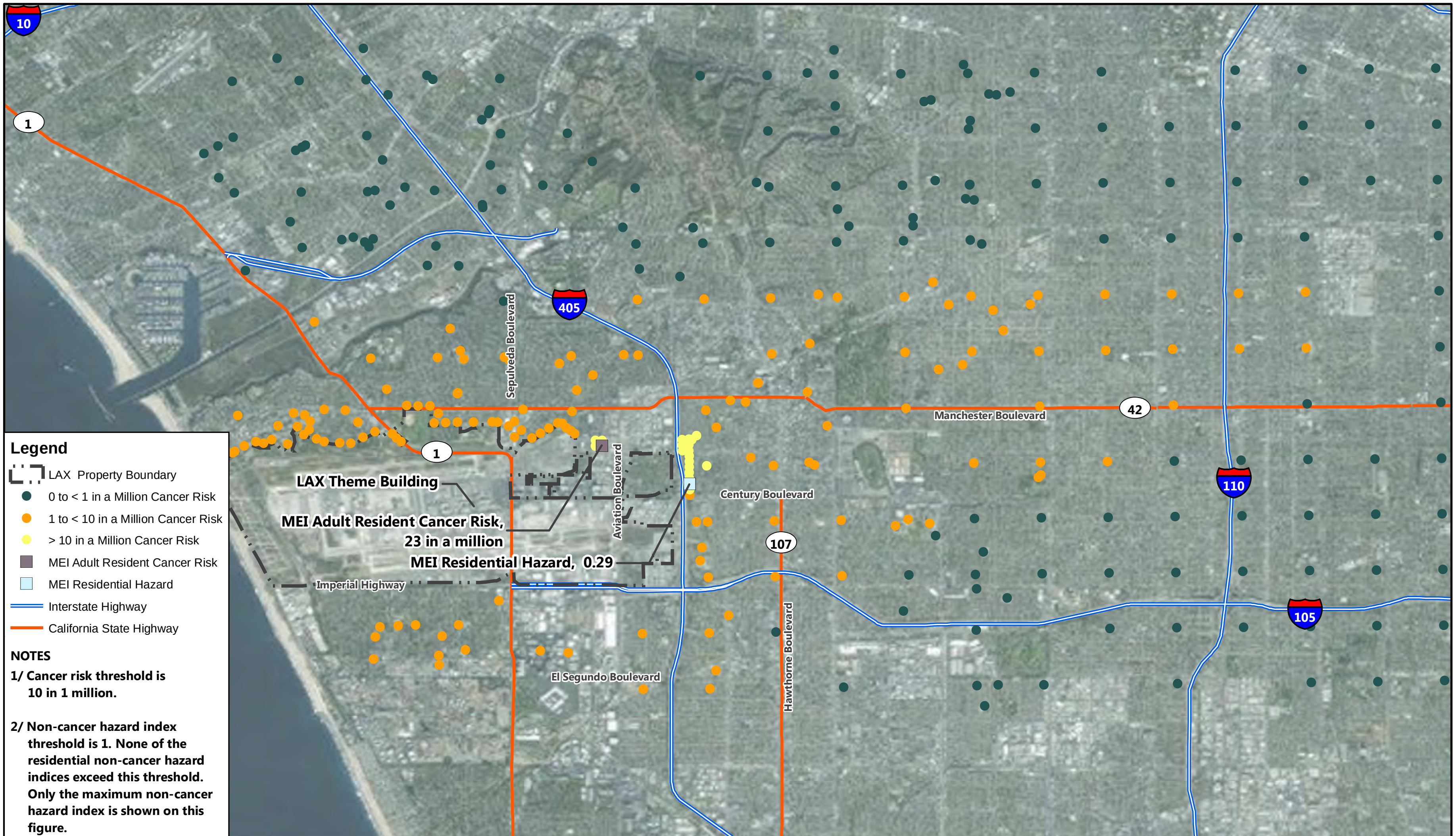

Legend

- LAX Property Boundary
- 0 to < 1 in a Million Cancer Risk
- 1 to < 10 in a Million Cancer Risk
- > 10 in a Million Cancer Risk
- MEI Adult Resident Cancer Risk
- MEI Residential Hazard
- Interstate Highway
- California State Highway

NOTES

1/ Cancer risk threshold is 10 in 1 million.

2/ Non-cancer hazard index threshold is 1. None of the residential non-cancer hazard indices exceed this threshold. Only the maximum non-cancer hazard index is shown on this figure.

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-3

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Construction Unmitigated – 30-year Adult Residential Incremental Cancer Risk

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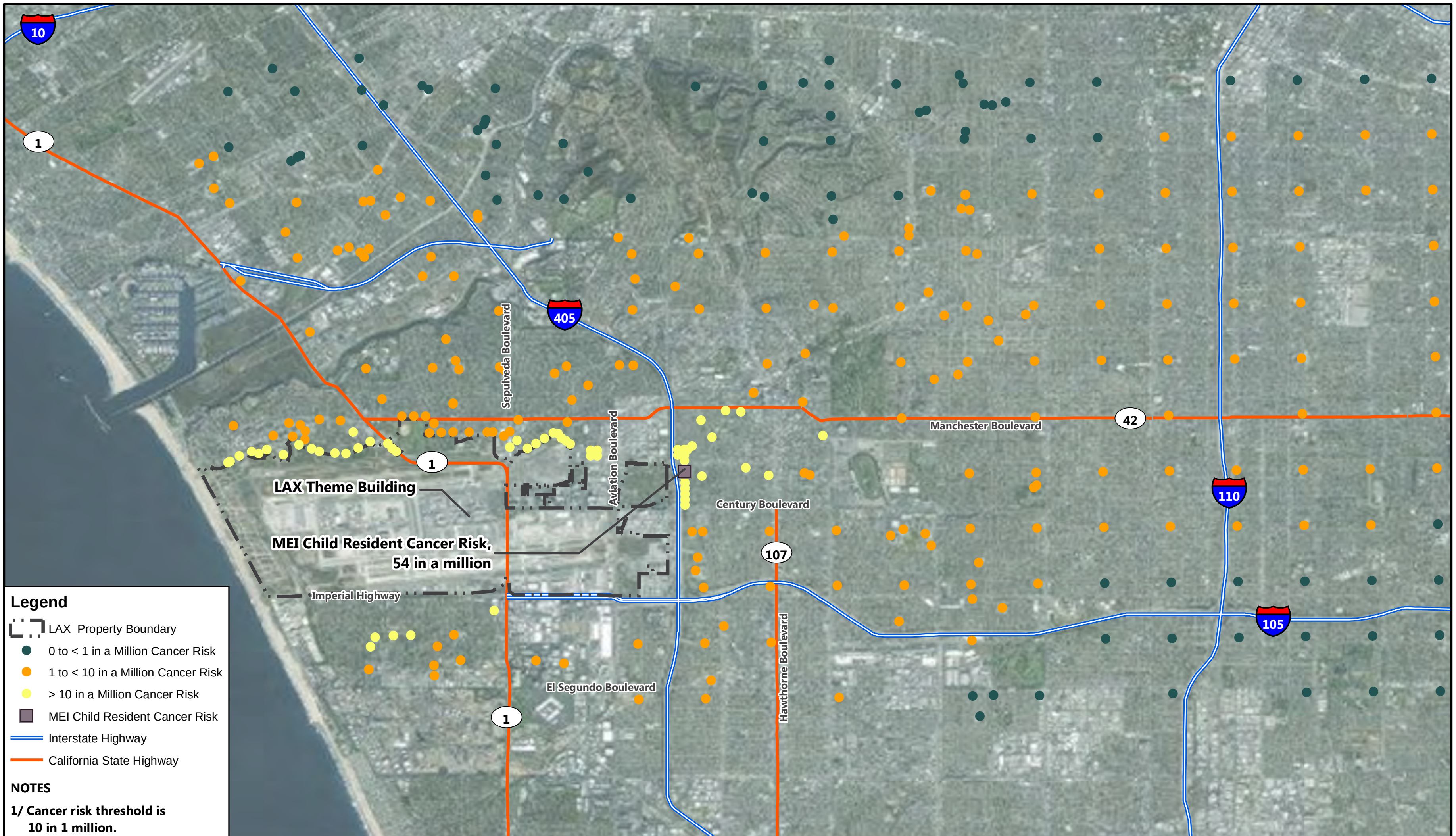

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-4

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Construction Unmitigated – 9-year Child Residential Incremental Cancer Risk

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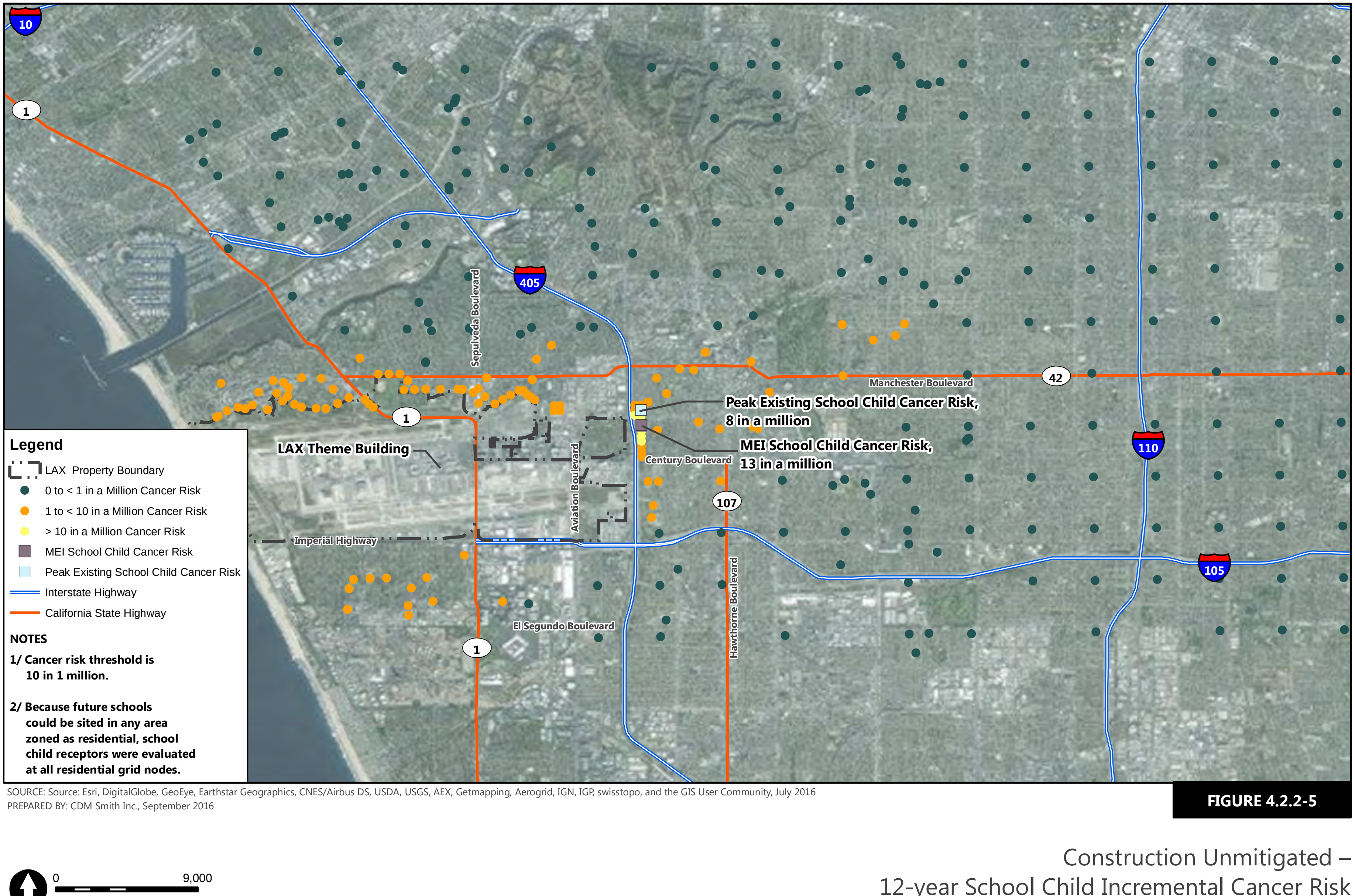

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-5

Construction Unmitigated –
12-year School Child Incremental Cancer Risk

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Adult Worker

For the construction scenario, adult workers were evaluated at 338 off-airport grid nodes and 2 on-airport/off-site grid nodes.[26] Because the exposure period of the adult worker is 25 years and construction of the project is estimated to be 14 years, incremental cancer risk for the worker was estimated assuming 7 years of construction, 7 years of construction and operations (the incremental difference between the 2024 Future With Project scenario and the 2024 Future Without Project), and 11 years of operations, including 4 years of the 2024 Future With Project operations and 7 years of the 2035 Future With Project operations.

Construction-related cancer risks for adult workers at the peak off-airport location are estimated to be 3 in one million. Overall, Project-related cancer risks for the proposed Project for adult workers would be below the threshold of significance. The peak location of construction-related cancer risks is shown on **Figure 4.2.2-6**.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for construction impacts associated with the proposed Project are provided in **Table 4.2.2-3**. 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.

Resident (Adult and Child) and School Children

The maximum HI for a resident living at the peak hazard location for a single year of construction of the proposed Project is 0.3, projected to occur in 2026. The peak residential hazard location is shown on Figure 4.2.2-3. 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 4.2.2-3, all incremental chronic non-cancer health hazards for residential adults and for young children are would be below the significance threshold of 1.

HI 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 0.5, projected to occur in 2020. The peak commercial hazard location is shown on Figure 4.2.2-6. All incremental chronic non-cancer health hazards for adult workers would be below the significance threshold of 1.

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

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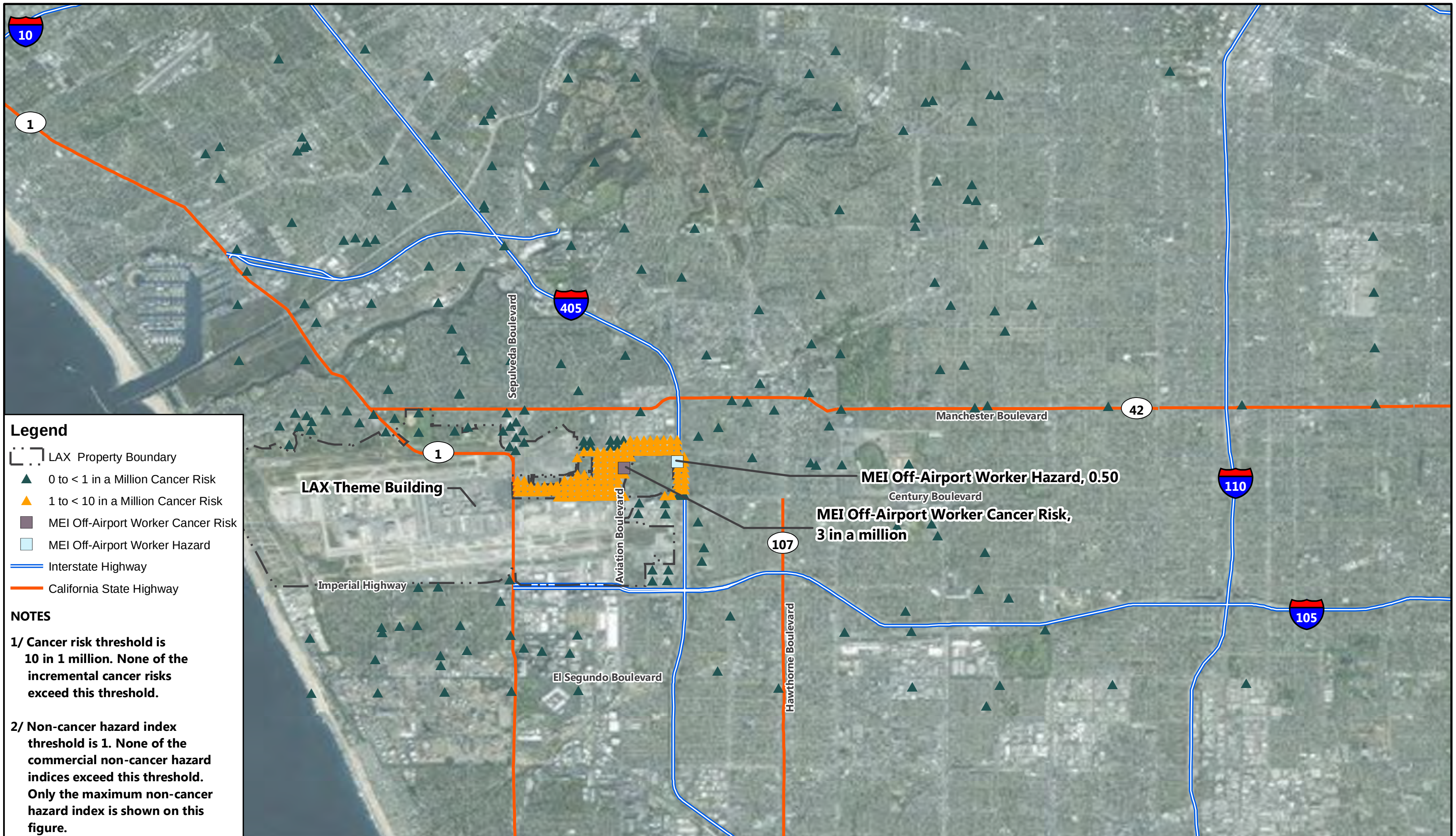

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-6

Construction Unmitigated –
25-year Off-Airport Worker Incremental Cancer Risk

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Table 4.2.2-3: Incremental Chronic Non-Cancer Human Health Hazards for Maximally Exposed Individuals from Project Construction

YEAR	RESIDENT[1/]	ADULT WORKER[1/]	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
2017	0.003	0.01	1	No
2018	0.05	0.28	1	No
2019	0.16	0.37	1	No
2020	0.22	0.50	1	No
2021	0.17	0.43	1	No
2022	0.14	0.40	1	No
2023	0.07	0.16	1	No
2024	0.27	0.27	1	No
2025	0.28	0.31	1	No
2026	0.29	0.34	1	No
2027	0.28	0.32	1	No
2028	0.28	0.31	1	No
2029	0.26	0.27	1	No
2030	0.26	0.26	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Acute Non-Cancer Health Hazards

Acute exposures to acrolein typically result in mild irritation of eyes and mucous membranes. Acute exposures to formaldehyde may result in irritation to the eye and respiratory system and adverse effects to the immune system. Acute exposures to nickel could also impact the immune system. Acute exposures to benzene could result in developmental impacts and impacts to the immune and hematologic systems. The target organ for acute toxicity of manganese is the nervous system.

Acute non-cancer health hazards were evaluated for two peak emission years of construction – 2019 and 2020. The year 2019 is estimated to have the peak diesel exhaust emissions and the year 2020 is estimated to have the peak construction dust emissions for particulate matter. In general, the peak years have nearly twice the emissions of the next closest year.

A HI equal to or greater than 1 would indicate possible acute adverse health effects. For the off-site worker, the hazard quotient for acute exposure to manganese during construction is equal to 1; all other hazard quotients are less than 1. The acute REL for manganese is set at or below a level at which no adverse health impacts are expected for the majority of the population and includes an uncertainty factor of 300. Hence, no health impacts are expected. Also, note that the target organ for acute toxicity of manganese is the nervous system and its actions would not be expected to be additive to the effects of acrolein and formaldehyde which target the respiratory system. Formaldehyde and manganese are the only chemicals with acute HI estimates close to the threshold of one. No additive impacts from exposure to manganese and other site related TAC are expected.

Formaldehyde and manganese are responsible for 5 to 47 percent and 30 to 84 percent, respectively, of all predicted construction-related acute non-cancer health hazards. Acrolein is only responsible for 0.04 to 0.4 percent of all predicted acute non-cancer health hazards associated with construction of the proposed Project. Benzene and nickel have greater contributions (2 to 14 percent and 4 to 7 percent, respectively) to the total acute non-cancer hazard than acrolein, though insignificant when compared to formaldehyde and manganese. Acrolein, which is associated with aircraft operations, results are shown here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects. Maximum acute non-cancer health hazards associated with exposure to these three chemicals from the proposed Project construction are summarized in **Table 4.2.2-4**.

Table 4.2.2-4: Construction-Related Acute Non-Cancer Health Hazards

	MANGANESE[1/]	ACROLEIN[1/]	FORMALDEHYDE[1/]	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
On-Site Worker	0.03 – 0.1	0.0001 – 0.001	0.02 – 0.2	1	No
Off-Site Worker	0.003 – 1.0	0.00001 – 0.003	0.001 – 0.1	1	No
Residential	0.002 – 0.7	0.000006 – 0.0004	0.0008 – 0.05	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Occupation Effects

Impacts to on-site workers during construction were evaluated by comparing estimated 8-hour air concentrations of TAC at the on-site location under the proposed Project for construction to the CalOSHA 8-hour PEL-TWAs. Two years were selected as the peak emission years – 2019 and 2020. The year 2019 is estimated to have the peak diesel exhaust emissions and the year 2020 is estimated to have the peak construction dust emissions for particulate matter. In general, the peak years have nearly twice the emissions of the next closest year. As shown in **Table 4.2.2-5**, the resulting 8-hour concentrations are a few to several orders of magnitude below PELs for all TAC. This means that air concentrations from airport emissions with construction of the proposed Project would not exceed those considered "acceptable" by CalOSHA standards, and construction impacts on workers' health would be less than significant.

[Draft]

Table 4.2.2-5: Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC[1/]	CALOSHA PEL TWA (ug/m^3) [2/]	2019	2020
1,2,4-Trimethylbenzene	12,5000	0.1338	0.1467
1,3-Butadiene	2,200	0.0488	0.0549
2,2,4-Trimethylpentane	N/A	0.0835	0.1033
Acetaldehyde	45,000	1.7978	1.8829
Acrolein	250	0.0006	0.0015
Benzene	324	0.5179	0.5607
Cumene	245,000	0.0049	0.0053
Cyclohexane	1,050,000	0.0101	0.0148
Ethyl Benzene	22,000	0.0804	0.0914
Ethylene	N/A	3.5431	3.7510
Formaldehyde	375	3.6026	3.7801
Hexane	180,000	0.0462	0.0593
Isoprene	N/A	0.0006	0.0016
Methanol	260,000	0.0079	0.0090
Methyl Ethyl Ketone {2-Butanone}	590,000	0.3619	0.3788
Naphthalene	500	0.0222	0.0236
Propionaldehyde	N/A	0.2373	0.2485
Propylene	N/A	0.6490	0.7002
Styrene	215,000	0.0152	0.0167
Toluene	37,000	0.3847	0.4424
Aluminum	2,000	0.4790	0.4051
Ammonium	18,000	0.0352	0.0229
Antimony	500	0.0005	0.0003
Arsenic	10	0.0002	0.0002
Barium	500	0.0566	0.0612
Bromine	700	0.0004	0.0003
Cadmium	5	0.0006	0.0004
Chlorine	1,500	0.0317	0.0278
Chromium	5	0.0001	0.0001
Cobalt	20	0.0008	0.0007
Copper	1,000	0.0115	0.0126
Lead	50	0.0040	0.0033
Manganese	200	0.0078	0.0069
Mercury	25	0.0004	0.0003
Nickel	500	0.0012	0.0012
Phosphorus	100	0.0115	0.0095
Selenium	200	0.0001	0.0001
Silicon	5,000	1.3128	1.1230
Silver	10	0.0003	0.0002
Sulfates	NA	0.2626	0.2013
Thallium	100	0	0
Vanadium (Fume Or Dust)	50	0.0026	0.0023
Zinc	NA	0.0092	0.0072
Xylenes	435,000	0.2779	0.3240

NOTES: NA = Not Available

1/ All TACs for which PEL-TWAs are available are listed. PEL-TWAs are not available for 2,2,4-trimethylpentane, ethylene, isoprene, propionaldehyde, propylene, sulfates, zinc and diesel exhaust.

2/ California Occupational Safety and Health Administration. ,*Table AC-1, Permissible Exposure Limits for Chemical Contaminants*, 2008,Available: http://www.dir.ca.gov/title8/5155table_ac1.html.

3/ Concentrations are for Theme Building at grid point 855.

SOURCE: Appendix F of this EIR 2016.
PREPARED BY: CDM Smith, September 2016.

Population-based Risks

Cancer Risks

To determine the population-wide risks, Project-related risks for construction impacts were evaluated for the 70-year residential scenario. The risks were plotted and cancer risk isopleths determined to identify the 1 in a million zone of impact. Using the 2015 population by census tract (estimated from the 2010 census population available from the U.S. Census[27]) cross-referenced with the calculated cancer risks, the cancer burden was calculated for each zone of impact. The total cancer burden for the Project was determined as the sum of individual census tract cancer burdens. As shown in **Table 4.2.2-6**, the zone of impact of 1 in a million (10^{-6}), shown in **Figure 4.2.2-7** for the evaluated scenarios would have a cancer burden below the threshold of significance of 0.5.

Table 4.2.2-6: Construction-Related Cancer Burden

ZONE OF IMPACT	CANCER BURDEN	THRESHOLD	EXCEEDS THRESHOLD?
Within 1 in a million	0.4	0.5	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Chronic and Acute Non-Cancer Hazards

Because all incremental chronic non-cancer health hazards for residents are below 1, population-level estimates for chronic and acute non-cancer health impacts were not estimated.

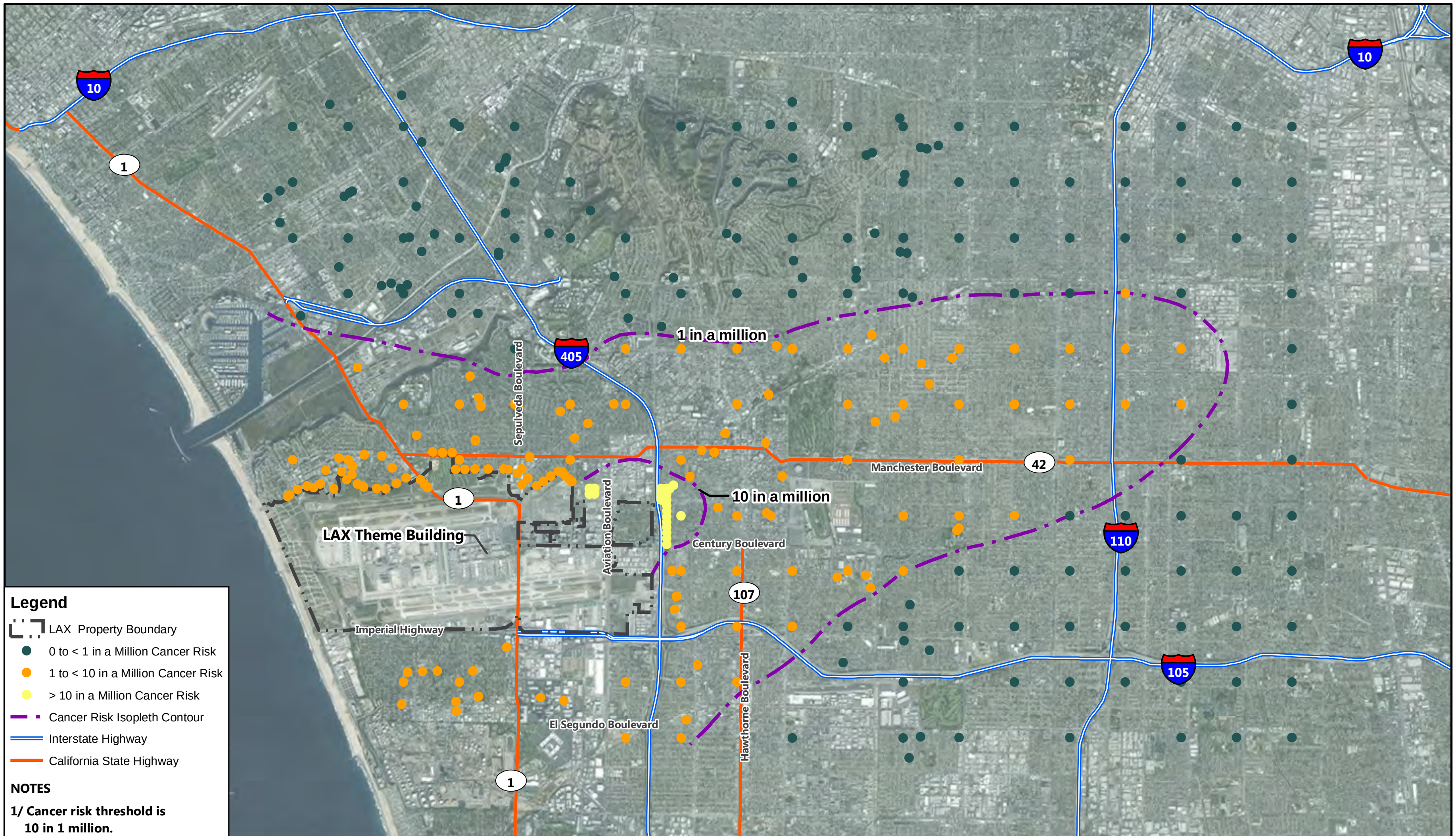
Operations

For future operations, including the 2024 and 2035 horizon years, 1,439 grid points were analyzed along the Airport fence-line and within the study area in the vicinity of the Airport. These locations are shown on Figure 4.2.2-2. The modeling grid for operations varies from the construction modeling grid in order to include traffic impacts from nearby roadways. In addition, risks and hazards for operations were added to the construction risks and hazards, for years 2024 and beyond.

Cancer Risks

Peak operation-related cancer risks for MEI are presented in **Table 4.2.2-7** and summarized in the following sections; calculations are presented in Appendix F. As shown, operation-related cancer risks would be below the threshold of significance for all receptors for the 2024 Future With Project vs. 2024 Future Without Project scenario and for the adult resident for the 2035 Future With Project vs. 2035 Future Without Project scenario.

[27] U.S. Department of Commerce, U.S. Census Bureau, Available: http://www.census.gov/.



SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-7

Construction Unmitigated – Cancer Burden

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Table 4.2.2-7: Incremental Peak Operation-Related Cancer Risks for Maximally Exposed Individuals

RECEPTOR TYPE	CANCER RISKS (PER MILLION PEOPLE)	THRESHOLD (PER MILLION PEOPLE)	EXCEEDS THRESHOLD?
2024 FUTURE WITH PROJECT VS. 2024 FUTURE WITHOUT PROJECT			
Adult Resident, 30 years	8	10	No
Child Resident, 9 years	8	10	No
School Child, 12 years	3	10	No
Adult Worker, 25 years	1	10	No
2035 FUTURE WITH PROJECT VS. 2035 FUTURE WITHOUT PROJECT			
Adult Resident, 30 years	4	10	No
Child Resident, 9 years	3	10	No
School Child, 12 years	1	10	No
Adult Worker, 25 years	0.8	10	No

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Residents (Adult and Child)

2024 Future With Project vs. 2024 Future Without Project Scenario

For operations, residents were evaluated at 333 off-Airport grid nodes.[28] As compared to the 2024 Future Without Project scenario, the 2024 Future With Project would result in an incremental cancer risk for a child resident of 8 in one million, and an incremental cancer risk for an adult resident of 8 in one million. An exposure period for child residents was assumed to be 9 years; exposure for adult residents was assumed to be 30 years. These estimates show that Project-related cancer risks for adults and for young children would be below the threshold of significance of 10 in one million. Peak locations for an adult and for a child are shown on **Figures 4.2.2-8** and **4.2.2-9**, respectively.

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

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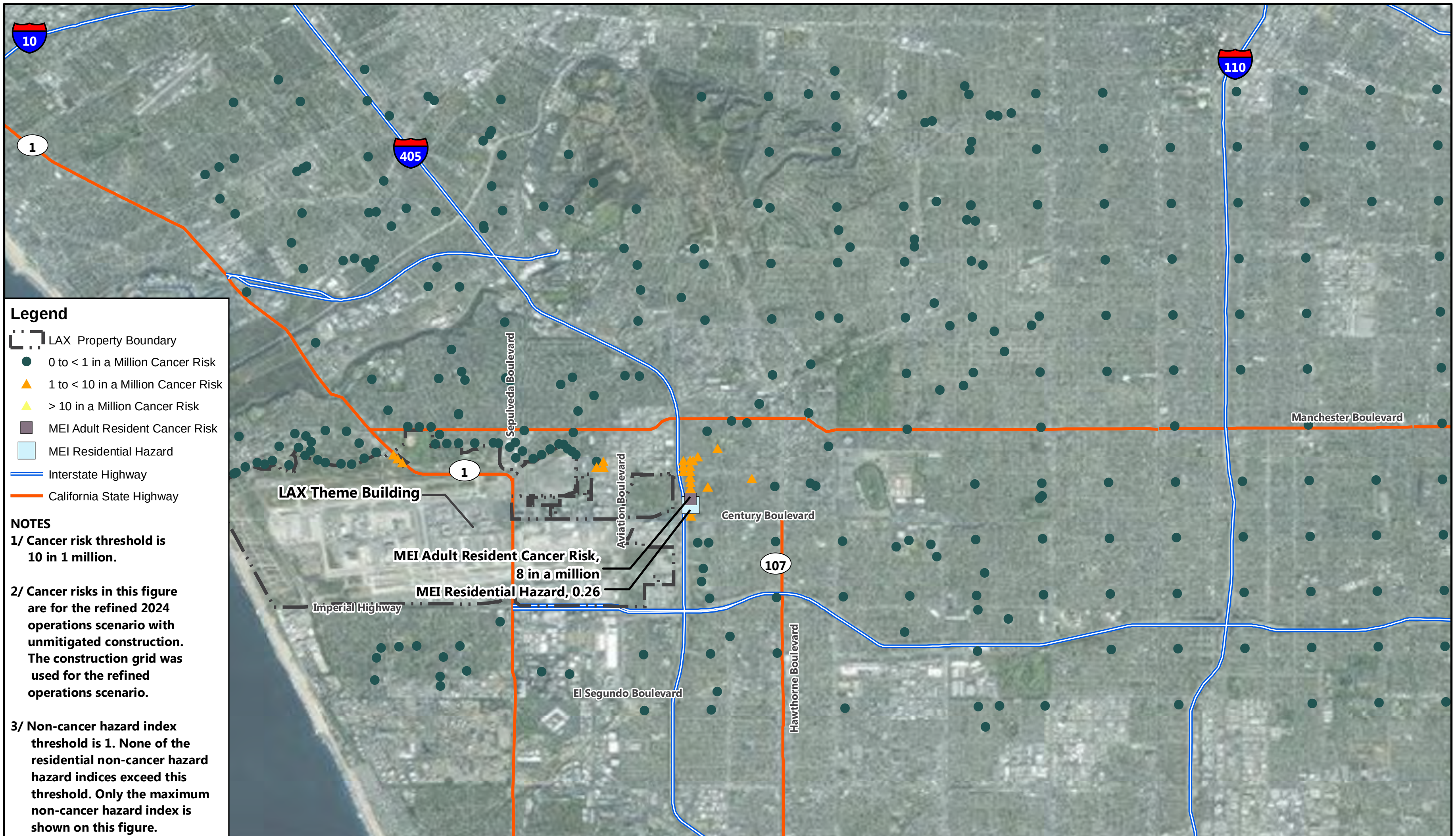

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-8

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2024 Future With Project Scenario vs. 2024 Future Without Project Scenario – 30-year Adult Residential Incremental Cancer Risk

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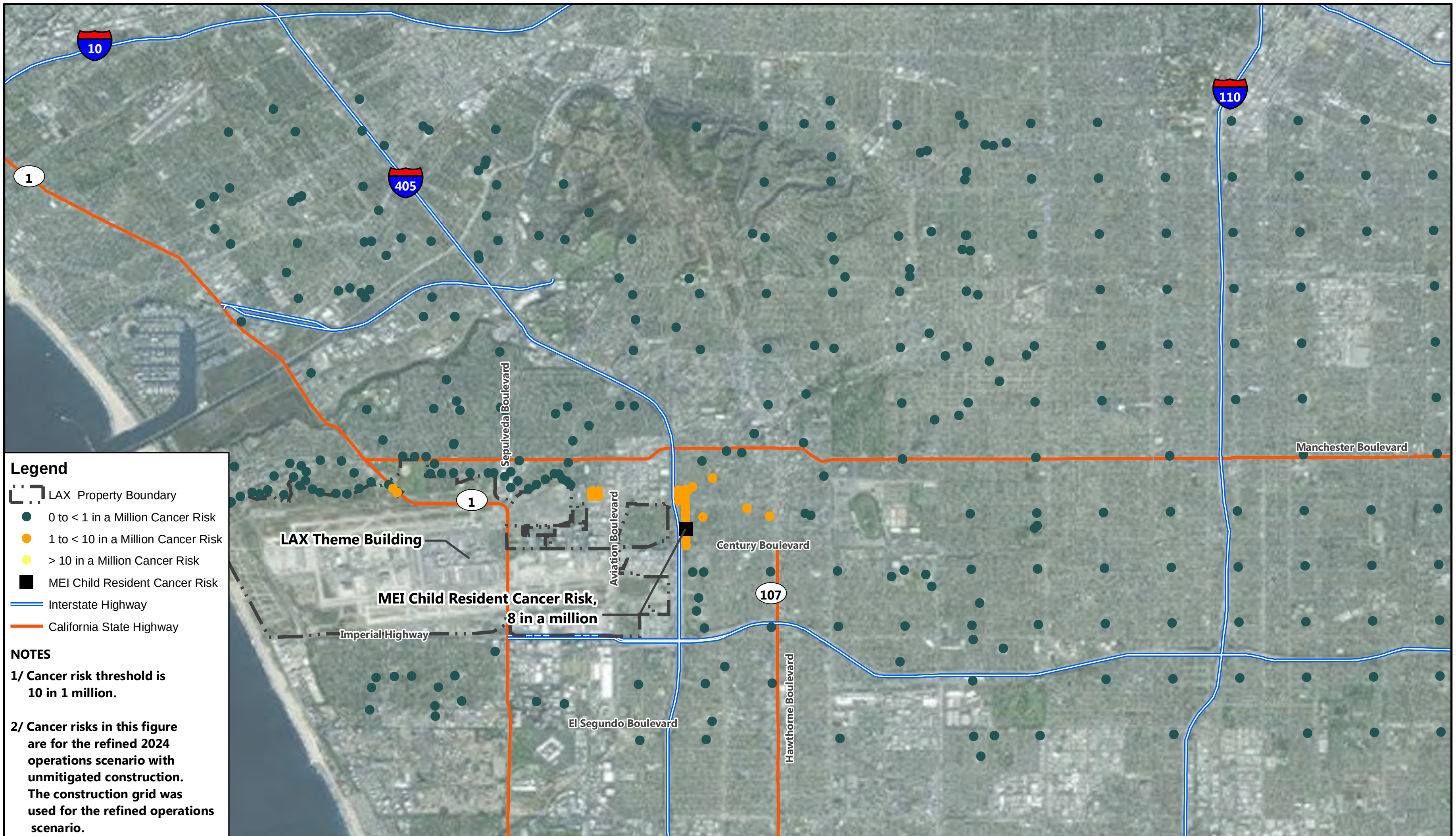

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-9

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2024 Future With Project Scenario vs. 2024 Future Without Project Scenario – 9-year Child Residential Incremental Cancer Risk

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<u>2035 Future With Project vs. 2035 Future Without Project Scenario</u>

Under the 2035 Future With Project scenario compared to the 2035 Future Without Project scenario, the incremental cancer risk for a child resident is estimated to be 3 in one million; the incremental cancer risk for an adult resident is estimated to be 4 in one million. These estimates show that project-related cancer risks would be below the threshold of significance of 10 in one million for adults and young children. These peak locations for an adult and for a child are shown on **Figures 4.2.2-10** and **4.2.2-11**, respectively.

School Child

Receptor locations for school children were evaluated at all residential or residential/commercial locations assuming schools could be constructed in these areas in the future. Schools do not currently exist at all of these locations.

<u>2024 Future With Project vs. 2024 Future Without Project Scenario</u>

Under the 2024 Future With Project scenario compared to the 2024 Future Without Project scenario, the incremental cancer risk for a school child would result in an estimated 3 in one million, which is below the threshold of significance of 10 in one million. An exposure period for school children was assumed to be 12 years. This peak location is shown on **Figure 4.2.2-12**. The closest existing school with peak cancer risks would be Oak Street Elementary School, as shown on Figure 4.2.2-12. Incremental cancer risk for children attending school at this location for 12 years is estimated to be 0.7 in one million, which is less than the threshold of significance of 10 in one million. Since the school is an elementary school that provides instruction for children from kindergarten through sixth grade (i.e., 7 years), actual exposure for the school child would be less than the 12-year exposure scenario that was modeled.

<u>2035 Future With Project vs. 2035 Future Without Project Scenario</u>

Under the 2035 Future With Project compared to the 2035 Future Without Project scenario, the incremental cancer risk for a school child is estimated to be 1 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-13**. In 2035, peak cancer risks at Oak Street Elementary School are estimated to be 0.3 in one million, which is less than the threshold of significance of 10 in one million.

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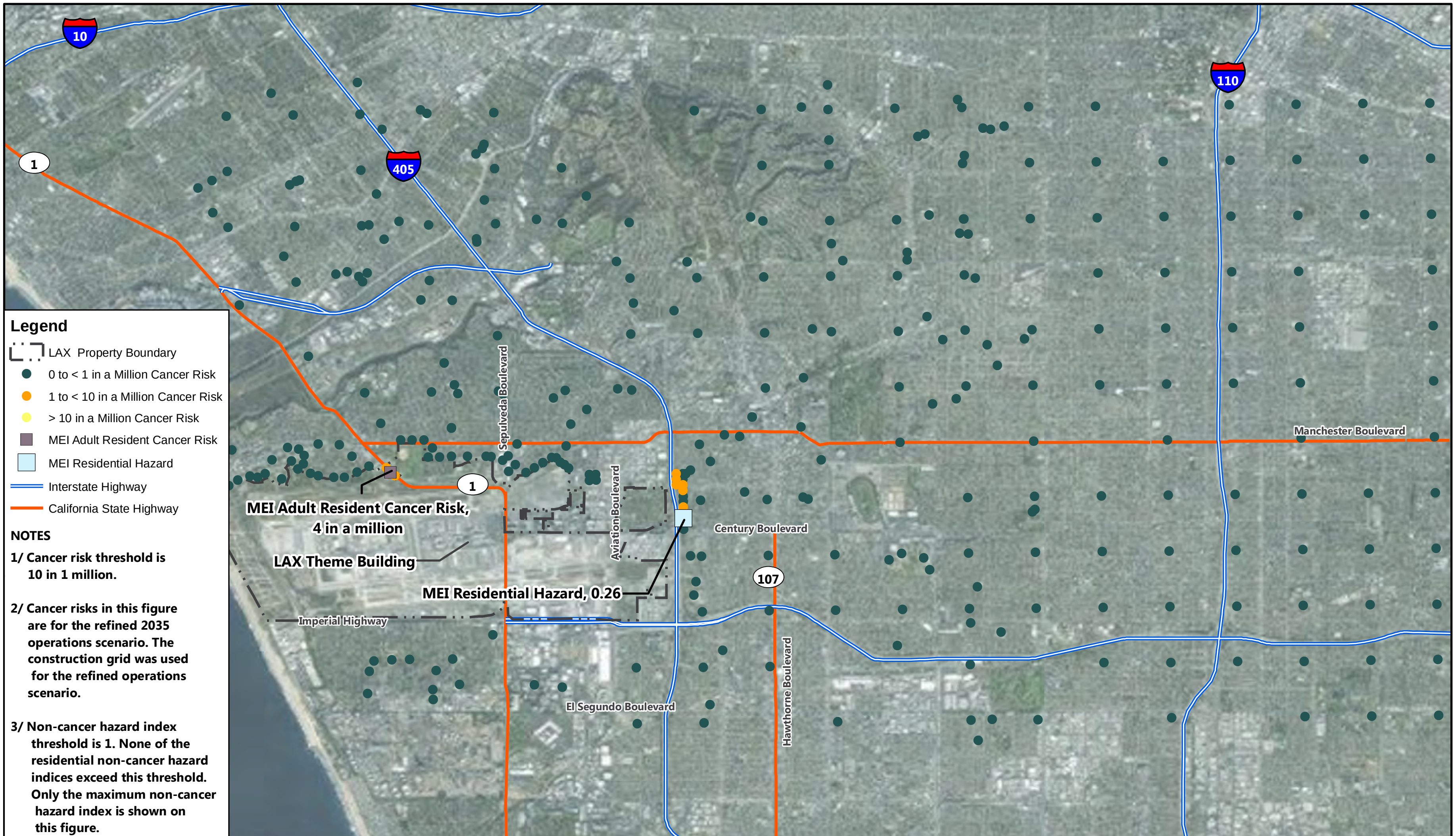

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-10

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario -
30-year Adult Residential Incremental Cancer Risk

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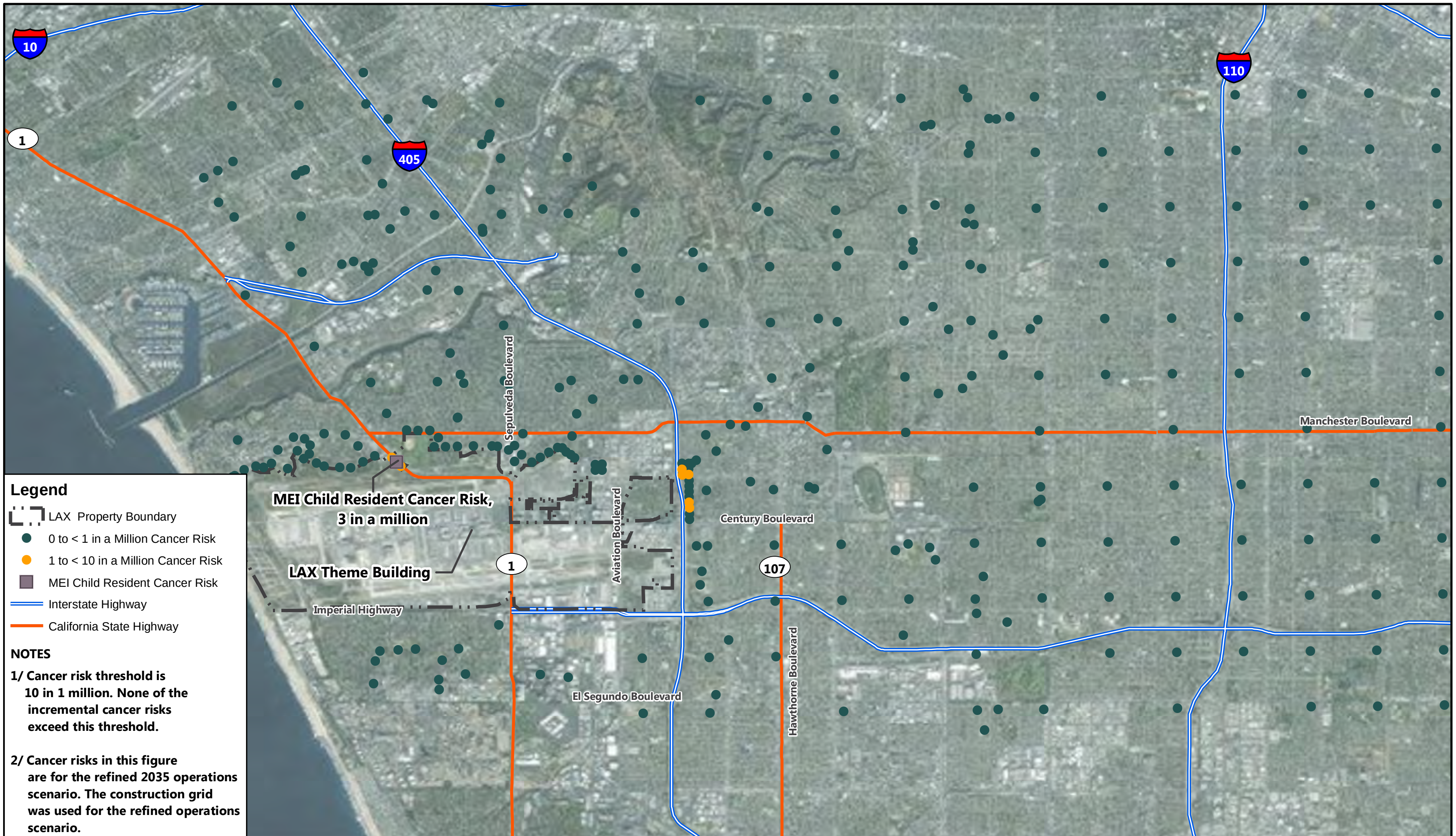

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FIGURE 4.2.2-11

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 9-year Child Residential Incremental Cancer Risk

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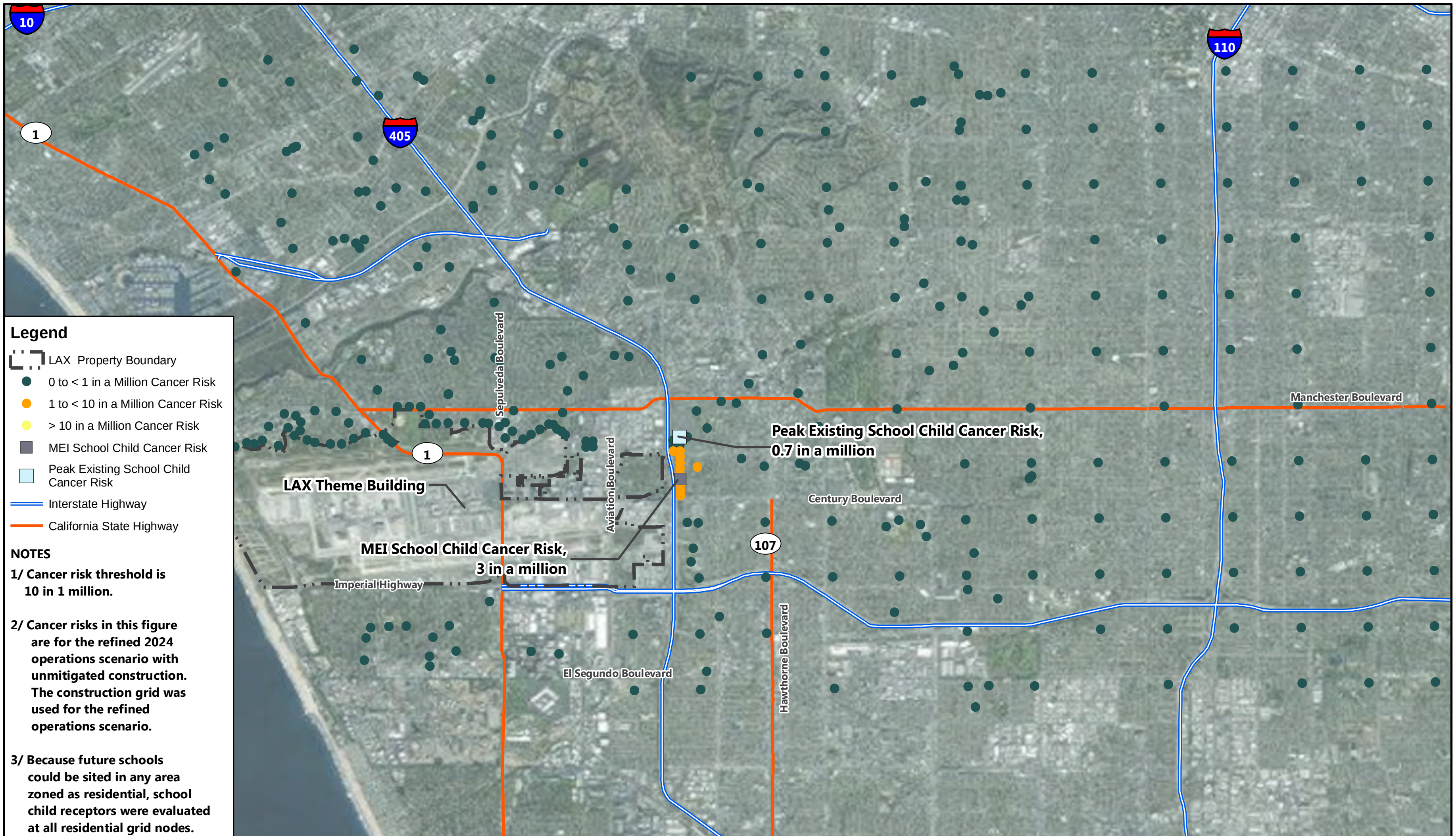

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-12

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2024 Future With Project Scenario vs. 2024 Future Without Project Scenario - 12-year School Child Incremental Cancer

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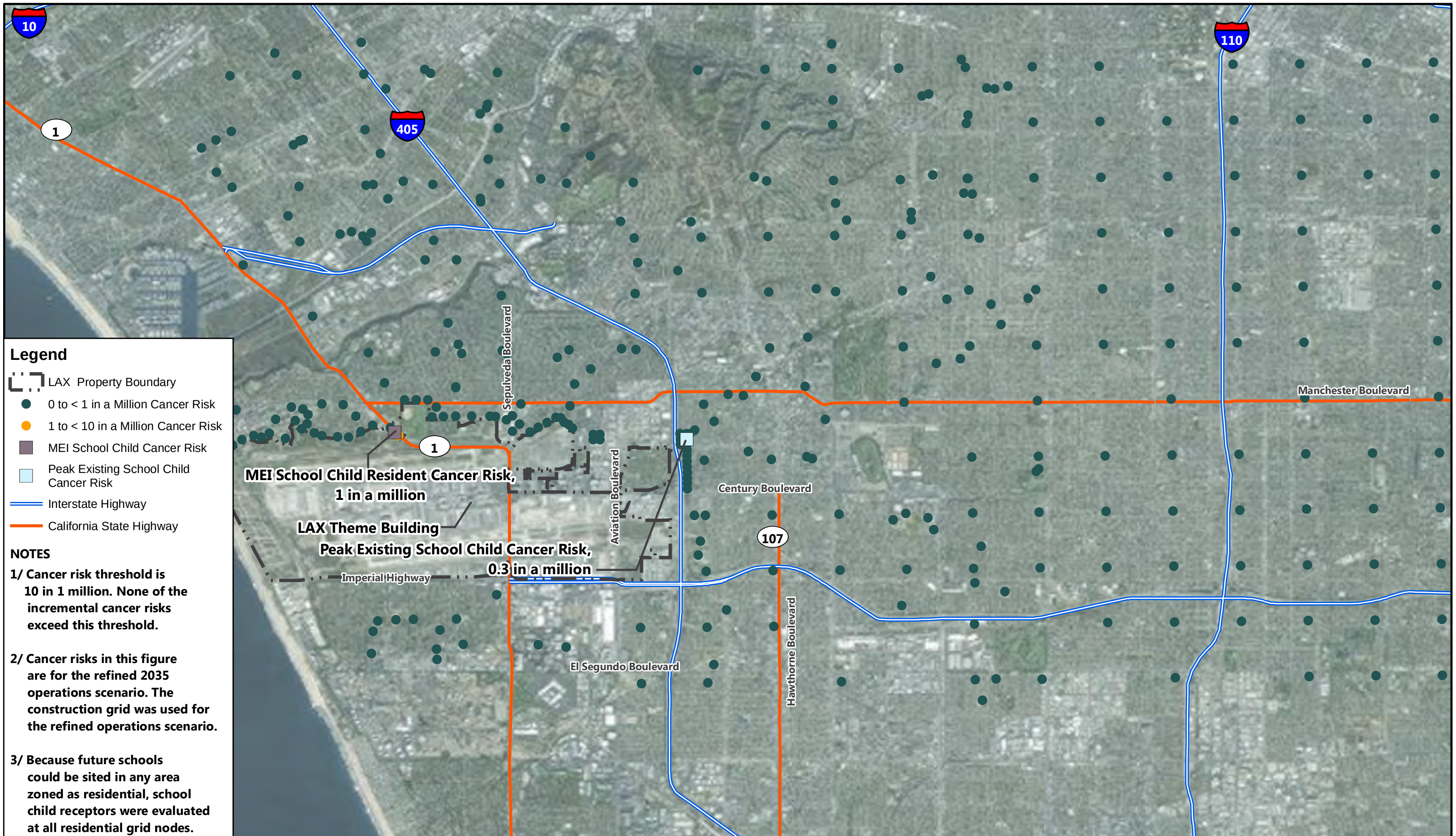

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-13

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 12-year School Child Incremental Cancer Risk

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Adult Worker

2024 Future With Project vs. 2024 Future Without Project Scenario

Under the 2024 Future With Project scenario compared to the 2024 Future Without Project, the incremental cancer risk for a worker assuming a 25-year exposure scenario is estimated to be 1 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-14**.

2035 Future With Project vs. 2035 Future Without Project Scenario

Under the 2035 Future With Project scenario compared to the 2035 Future Without Project, the incremental cancer risk for an adult worker assuming a 25-year exposure scenario is estimated to be 0.8 in one million, which is below the threshold of significance of 10 in one million. This peak location is shown on **Figure 4.2.2-15**.

Project-related cancer risks for adult workers would be below the threshold of significance for the proposed Project during operations under both the 2024 and 2035 horizon years.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for operational impacts associated with the proposed Project are provided in **Table 4.2.2-8**. Hazard indices are shown for both the 2024 and 2035 horizon years. As shown, chronic non-cancer human health hazards would be less than significant for both residents and workers.

Table 4.2.2-8: Project-Related Non-Cancer Hazard Indices

INCREMENTAL CHRONIC NON-CANCER HUMAN HEALTH HAZARDS FOR MAXIMALLY EXPOSED INDIVIDUALS FROM PROJECT OPERATIONSRECEPTOR TYPE	2024 FUTURE WITH PROJECT VS. 2024 FUTURE WITHOUT PROJECT1/	2035 FUTURE WITH PROJECT VS. 2035 FUTURE WITHOUT PROJECT1/	SIGNIFICANCE THRESHOLD	EXCEEDS THRESHOLD?
Residential	0.26	0.26	1	No
Commercial	0.26	0.28	1	No

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

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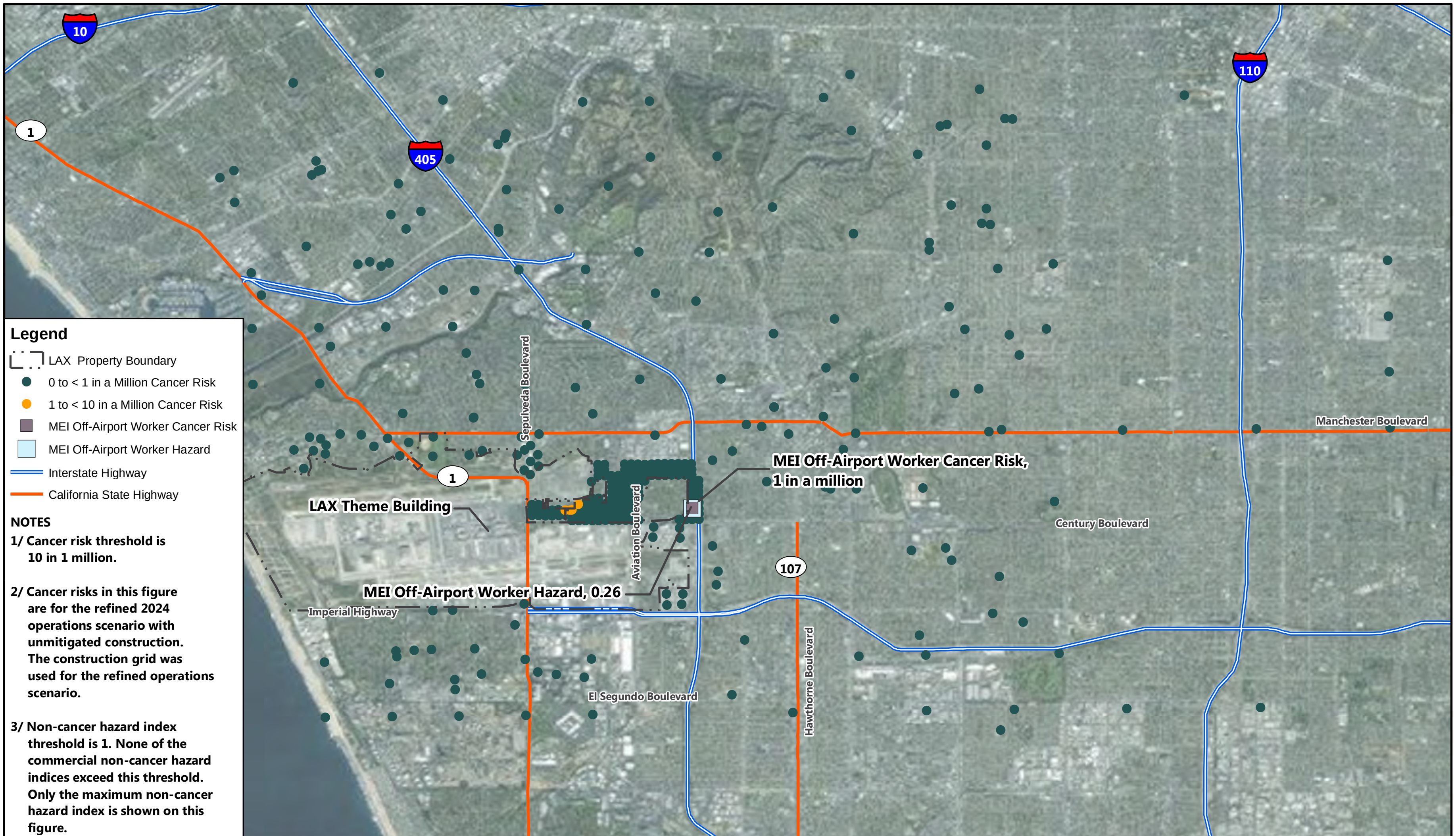

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-14

2024 Future With Project Scenario vs. 2024 Future Without Project Scenario - 25-year Off-Airport Worker Incremental Cancer Risk

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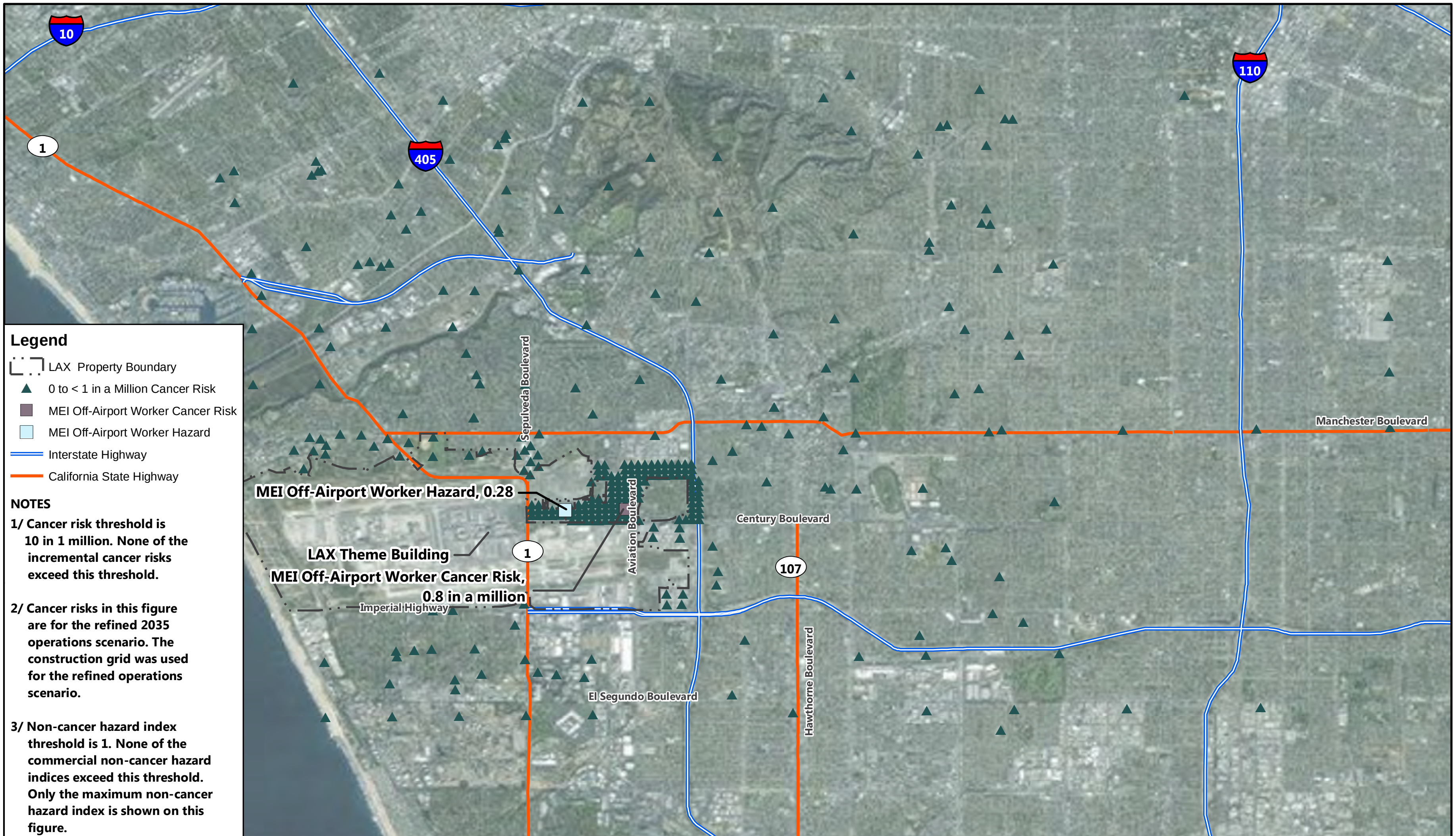

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-15

0 9,000
Feet

2035 Future With Project Scenario vs. 2035 Future Without Project Scenario - 25-year Off-Airport Worker Incremental Cancer Risk

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Resident

2024 Future With Project vs. 2024 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for residents are estimated to be 0.26 under the 2024 Future With Project scenario. This peak location is shown on Figure 4.2.2-8. Project-related chronic non-cancer health hazards for adult workers for the proposed Project would be below the threshold of significance.

2035 Future With Project vs. 2035 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for residents are estimated to be 0.26 under the 2035 Future With Project scenario. This peak location is shown on Figure 4.2.2-10. Project-related chronic non-cancer health hazards for adult workers for the proposed Project would be below the threshold of significance.

Adult Worker

2024 Future With Project vs. 2024 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for adult workers are estimated to be 0.26 under the 2024 Future With Project scenario. This peak location is shown on Figure 4.2.2-14. Project-related chronic non-cancer health hazards for adult workers for the proposed Project area would be below the threshold of significance.

2035 Future With Project vs. 2035 Future Without Project Scenario

Project-related chronic non-cancer hazard indices for adult workers are estimated to be 0.28 under the 2035 Future With Project scenario. This peak location is shown on Figure 4.2.2-15. Project-related chronic non-cancer health hazards for adult workers for the proposed Project are would be below the threshold of significance.

Acute Non-Cancer Health Hazards

Acute non-cancer health hazards were evaluated for each horizon year of operations in 2024 and 2035, as shown in **Table 4.2.2-9**. As shown, all hazards indices due to acute exposure are below 1 for all evaluated on-site and off-site grid nodes within the study area of the proposed Project. Hence, acute non-cancer health impacts from operations of the proposed Project are unlikely. A HI equal to or greater than 1 indicates the potential for acute adverse health effects.

Acrolein, which is a byproduct of aircraft engine emissions, results are shown here for informational purposes because it has historically been a TAC of concern for acute non-cancer health hazards for other LAX projects.

Table 4.2.2-9: Operations-Related Acute Non-Cancer Health Hazards

	MANGANESE[1/]		ACROLEIN[1/]		FORMALDEHYDE[1/]	
RECEPTOR TYPE	**2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT**	**2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT**	**2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT**	**2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT**	**2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT**	**2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT**
On-Site Worker						
Maximum HI	0.02	0.02	0.0004	0.0002	0.0004	0.0005
Average HI	0.01	0.02	0.0003	0.0001	0.00031	0.0003
Minimum HI	0.003	0.004	0.00006	0.00003	0.00007	0.00006
Off-Site Worker						
Maximum HI	0.02	0.02	0.0005	0.0003	0.0004	0.0006
Average HI	0.003	0.003	0.00006	0.00003	0.00008	0.00007
Minimum HI	0.0006	0.0006	0.00001	0.000006	0.00001	0.00001
Residential						
Maximum HI	0.05	0.05	0.0009	0.0005	0.0007	0.0006
Average HI	0.003	0.003	0.00006	0.00003	0.00007	0.00006
Minimum HI	0.0005	0.0005	0.00001	0.000005	0.00002	0.00001

NOTE:

1/ Hazard indices are unitless.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Occupation Effects

Impacts to on-site workers during operations were evaluated by comparing estimated 8-hour air concentrations of TAC at the on-site location under the proposed Project for controlled construction to the CalOSHA 8-hour PEL-TWAs. As shown in **Table 4.2.2-10**, the resulting 8-hour concentrations are a few to several orders of magnitude below PELs for all TAC. This result suggests that air concentrations from airport emissions with implementation of the proposed Project would not exceed those considered "acceptable" by CalOSHA standards.

[Draft]

Table 4.2.2-10 (1 of 2): Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC [1/]	CALOSHA PEL TWA (UG/M^3) [2/]	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT[3/]	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT[3/]
1,2,4-Trimethylbenzene	12,5000	0.00083	0.00052
1,3-Butadiene	2,200	0.00046	0.00027
2,2,4-Trimethylpentane	N/A	0.00190	0.00109
Acetaldehyde	45,000	0.00079	0.00117
Acrolein	250	0.00011	0.00006
Benzene	324	0.00217	0.00141
Cumene	245,000	0.00001	0.00001
Cyclohexane	1,050,000	0.00050	0.00028
Ethyl Benzene	22,000	0.00088	0.00052
Ethylene	NA	0.00629	0.00494
Formaldehyde	375	0.00241	0.00280
Hexane	180,000	0.00131	0.00075
Isoprene, Except From Vegetative Emission Sources	N/A	0.00012	0.00006
Methanol	260,000	0.00010	0.00006
Methyl Ethyl Ketone {2-Butanone}	590,000	0.00013	0.00022
Naphthalene	500	0.00005	0.00003
Propionaldehyde	N/A	0.00010	0.00015
Propylene	N/A	0.00269	0.00176
Styrene	215,000	0.00010	0.00006
Toluene	37,000	0.00481	0.00283
Aluminum	2,000	0.03472	0.04110
Ammonium	18,000	0.00095	0.00112
Antimony	500	0.00002	0.00003
Arsenic	10	0.00001	0.00001
Barium	500	0.00801	0.00916
Bromine	700	0.00002	0.00001
Cadmium	5	0.000001	0.000001
Chlorine	1,500	0.00136	0.00119
Chromium	5	0.00001	0.00001

Table 4.2.2-10 (2 of 2): Comparison of CalOSHA Permissible Exposure Limits to Maximum Estimated 8-Hour On-Site Air Concentrations for Construction

TAC 1/	CALOSHA PEL TWA (UG/M^3) 2/	2024 FUTURE WITH PROJECT V. 2024 FUTURE WITHOUT PROJECT 3/	2035 FUTURE WITH PROJECT V. 2035 FUTURE WITHOUT PROJECT 3/
Cobalt	20	0.00001	0.00001
Copper	1,000	0.00169	0.00192
Lead	50	0.00005	0.00006
Manganese	200	0.00051	0.00059
Mercury	25	0.000003	0.000003
Nickel	500	0.00010	0.00012
Phosphorus	100	0.00092	0.00109
Selenium	200	0.000004	0.000005
Silicon	5,000	0.10823	0.12770
Silver	10	0.00000001	0.00000002
Sulfates	NA	0.01042	0.00953
Thallium	100	0.000001	0.000002
Vanadium (Fume Or Dust)	50	0.00012	0.00013
Zinc	N/A	0.00053	0.00061
Xylenes	435,000	0.00400	0.00234

NOTES:

1/ All TACs for which PEL-TWAs are available are listed. PEL-TWAs are not available for 2,2,4-trimethylpentane, ethylene, isoprene, propionaldehyde, propylene, sulfates, zinc and diesel exhaust.

2/ California Occupational Safety and Health Administration, *Table AC-1, Permissible Exposure Limits for Chemical Contaminants*, 2008, Available: http://www.dir.ca.gov/title8/5155table_ac1.html.

3/ Concentrations are for the Theme Building at grid point 855.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Population-based Risks

Cancer Risks

To determine the population-wide risks, Project-related risks for operation impacts were evaluated for the 70-year residential scenario. As shown in **Table 4.2.2-11**, the zone of impact of 1 in a million (10^{-6}) for the for 2024 Future With Project vs. 2024 Future Without Project would have a cancer burden below the threshold of significance of 0.5. The cancer isopleths and peak locations for 2024 Future With Project vs. 2024 Future Without Project are shown on **Figure 4.2.2-16**. Since cancer burdens in 2024 are below threshold and total cancer risk for 2035 Future With Project vs. 2035 Future Without Project is less than 2024 Future With Project vs. 2024 Future Without Project, cancer burdens were not calculated for 2035 Future With Project vs. 2035

Table 4.2.2-11: Operation-Related Cancer Burden

ZONE OF IMPACT	CANCER BURDEN[1/]	THRESHOLD	EXCEEDS THRESHOLD?
Within 1 in a million	0.05	0.5	No

NOTE:

1/ Cancer burdens provided for 2024 Future With Project vs. 2024 Future Without Project.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Future Without Project. The cancer isopleths and peak locations for 2035 Future With Project vs. 2035 Future Without Project are shown on **Figure 4.2.2-17**.

Chronic Non-Cancer Hazards

Because all incremental chronic non-cancer health hazards for residents are below 1, population-level estimates for chronic non-cancer health impacts were not estimated.

Acute Non-Cancer Hazards

Because all incremental acute non-cancer health hazards for residents are below 1, population-level estimates for acute non-cancer health impacts were not estimated.

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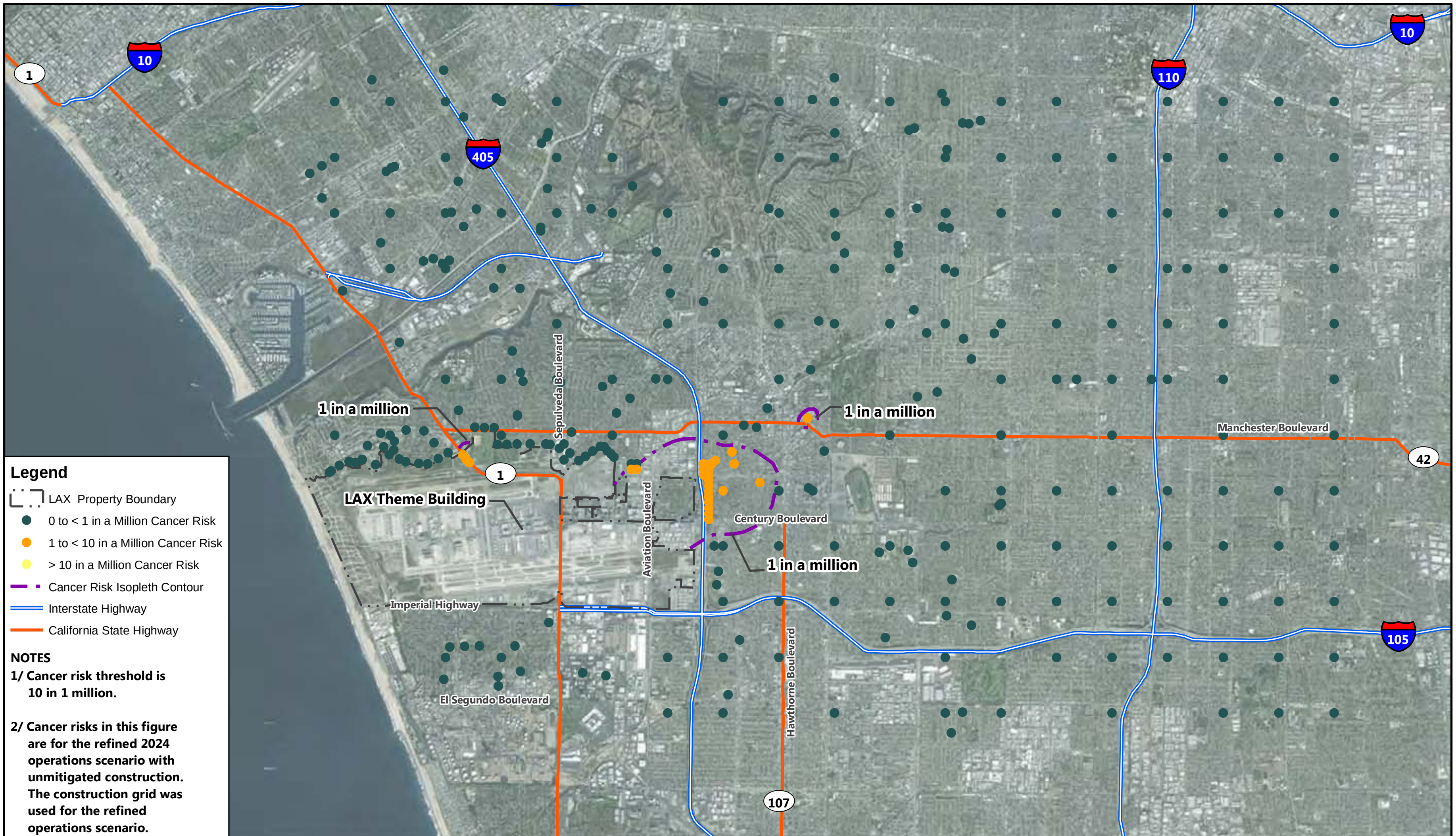

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-16

2024 Future With Project v. 2024 Future Without Project Operations – Cancer Risk

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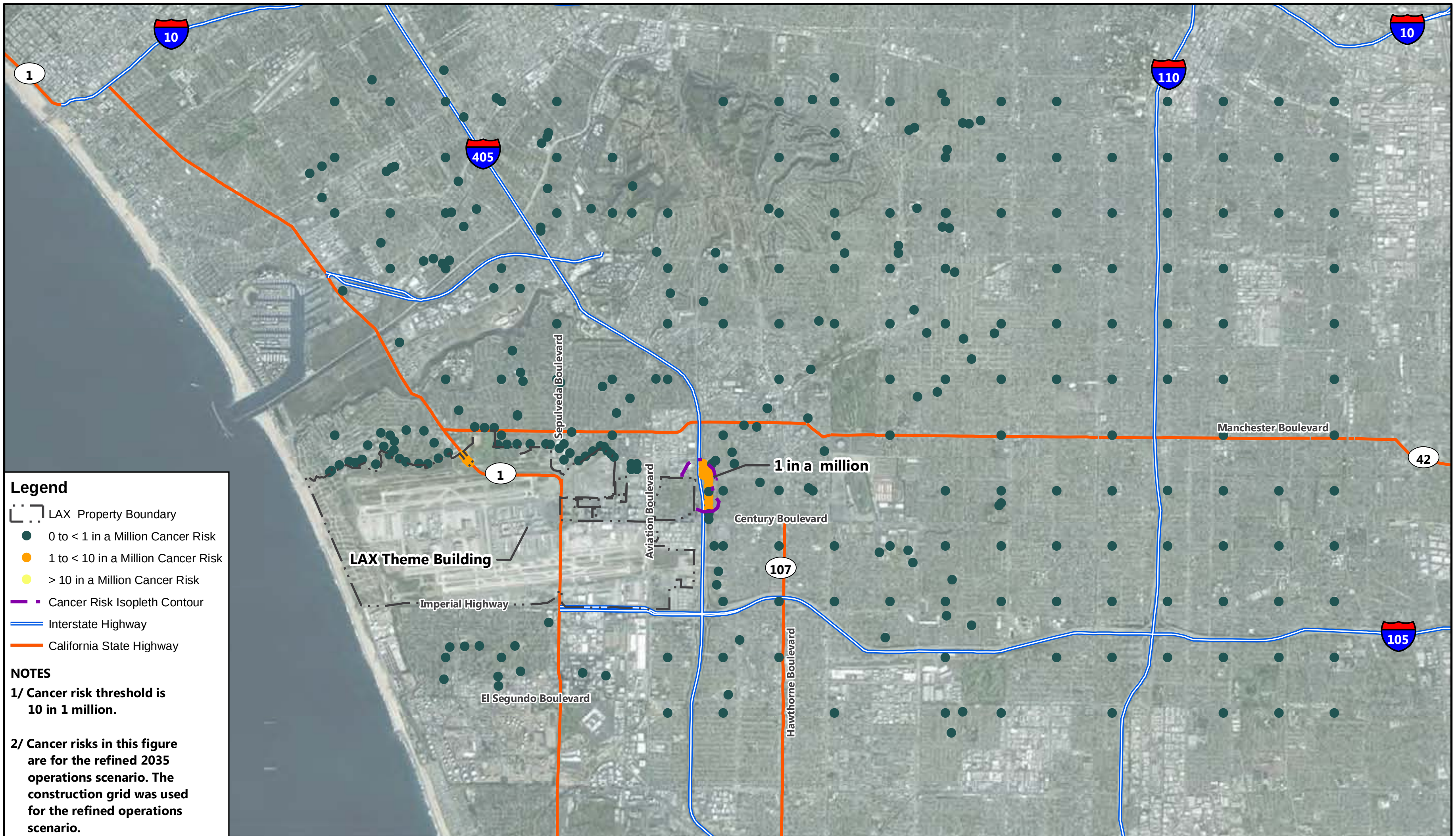

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
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FIGURE 4.2.2-17

2035 Future With Project v. 2035 Future Without Project Operations – Cancer Risk

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4.2.2.4.2 Summary of Unmitigated Impacts

The HHRA addressed incremental health impacts associated with construction and operations 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 above the threshold of significance of 10 in one million for child resident, school child, and adult resident. Incremental cancer risk impacts from construction would be significant.
- Incremental cancer risks associated with operation of the proposed Project for 2024 conditions would be below the threshold of significance of 10 in one million for all receptor types (i.e., child resident, school child, adult resident, and adult worker). Incremental cancer risks associated with operation of the proposed Project for 2035 conditions would be below the threshold of significance of 10 in one million for all receptor types. Incremental cancer risk impacts from operations would be less than significant.
- Project-related population-based risks for 70-year residents for construction impacts associated with the proposed Project within the zone of impact of 1 in a million (10^{-6}) would be below the threshold of significance of 0.5.
- Project-related population-based risks for 70-year residents for operations associated with the proposed Project within the zone of impact of 10^{-6} would be below the threshold of significance of 0.5.
- Given the results of cancer burden calculations, cancer risk estimates affect too small an area and population to be judged significant, and, overall the project can be determined to have a less than significant impact.
- Incremental chronic non-cancer hazard indices associated with construction and operation of the proposed Project would be below the threshold of significance for all receptor types (i.e., child resident, school child, adult resident, and adult worker). Incremental chronic non-cancer impacts from construction and operations 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 and operation of the proposed Project. Incremental acute non-cancer impacts would be less than significant.
- Estimated maximum air concentrations for all TAC evaluated on the proposed Project site would not exceed PEL-TWA for Project construction workers or on-site workers during operations. Therefore, health impacts to on-airport/on-site workers would be less than significant.

4.2.2.5 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, relative 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.

Cancer Risks

The SCAQMD has conducted a series of urban air toxics monitoring and evaluation studies for the South Coast Air Basin called Multiple Air Toxics Exposure Study (MATES) in the South Coast Air Basin.[29] The original study published in June 1987 has been updated several times; the most recent study, MATES-IV, was published in May 2015.[30] 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 54 cancer cases per million) would not add substantially (less than 10 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.

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[29] 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

[30] 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.

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.

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 project, chronic non-cancer health hazards are primarily attributable to DPM and silicon and barium, and to a lesser extent acrolein and chlorine, aluminum, nickel, cobalt, and manganese. 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).[31] 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[32] for annual average concentrations yield acrolein hazard indices by census tract ranging from 0.1 to 11, with an average of 2; DPM hazard indices ranging from 0.005 to 0.5, with an average of 0.1; and chlorine hazard indices ranging from 0.003 to 0.2, with an average of 0.06. Incremental hazard indices for the proposed Project (Table 4.2.2-3) were estimated to range from 0.0034 to 0.5 below the threshold of significance of one. Given the relatively small hazard indices associated with proposed Project emissions, the proposed Project is not expected to add significantly to cumulative chronic non-cancer health hazards.

Because of the substantial uncertainties associated with the USEPA estimates[33], 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 potential interactions among acrolein and criteria pollutants. Such interactions cannot, at this time, be addressed in a quantitative fashion. A

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31 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.

32 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.

33 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.

qualitative discussion of the issue is presented in the LAX Master Plan Final EIR[34] 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. Degradation may be very important for relatively reactive chemicals such as acrolein.

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[35] (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 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[36] (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

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[34] City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

[35] City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

[36] City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* (SCH 1997061047), April 2004.

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 ranged from 0.000006 to 0.003; associated with formaldehyde ranged from 0.0008 to 0.2; and associated with manganese ranged from 0.003 to 1. 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, cumulative acute non-cancer health hazards associated with the proposed Project would not be cumulatively considerable.

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.[37] If cumulative health risks are evaluated following this SCAQMD policy, the Project's contribution to the cumulative cancer risk would be cumulatively considerable under the unmitigated construction scenario since the incremental cancer risk impacts of the proposed Project for more than one receptor under this scenario would be above the individual cancer risk significance thresholds of 10 in one million. However, the incremental cancer risk impacts of the proposed Project under mitigated construction, 2024 operations, and 2035 operations would be below the individual cancer risk significance threshold of 10 in one million and would not be cumulatively considerable.

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 one (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.

4.2.2.6 Mitigation Measures

Air quality mitigation measures described in Section 4.2.1.7, would be applied to the proposed Project. Although developed to address air quality impacts, these mitigation measures would also reduce health risks associated with exposure to TAC. As noted in Section 4.2.1.7, the mitigation measures identified in Section 4.2.1.7 were modified due to recent experience with a lack of available Tier 4 construction equipment. The analysis for mitigated criteria air pollutant impacts assumed that the off-road construction equipment fleet would 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 also assumed to be fitted with Level 3

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

VDECS diesel particulate filters. In addition, LAWA is committing to using 90 percent renewable diesel fuel in construction equipment per MM-AQ (LAMP)-1. Applying these mitigation assumptions to the construction health risk impacts resulted substantial reductions in cancer risks; however, the child resident was still estimated to have a cancer risk of approximately 12 per million, above the 10 per million significance threshold. Therefore, LAWA is committing to a mitigation program that will result in 40 percent of the off-road construction equipment used on the Project meeting Tier 4 Final standards, 40 percent meeting Tier 4 Interim Standards, and the remaining 20 percent meeting Tier 3 standards – with 50 percent of Tier 3 compliant equipment installed with Level 3 VDECS particulate filters.

4.2.2.7 Impacts After Mitigation

The mitigation measures noted above would reduce construction-related health risk impacts associated with development of the proposed Project. The effect of implementation of these measures on construction risks are assessed below. These mitigation measures would affect only construction related emissions; emissions from Project operations, which are less than significant, would not be reduced.

Cancer Risks

Peak construction-related cancer risks for MEI, incorporating mitigation, are presented in **Table 4.2.2-12** and summarized in the following sections; calculations are presented in Appendix F. As shown, after incorporating the mitigation program noted above, construction-related cancer risks would be reduced to less than 10 in one million for all residents. Cancer burden would also be reduced, and would remain the below the significant threshold of 0.5.

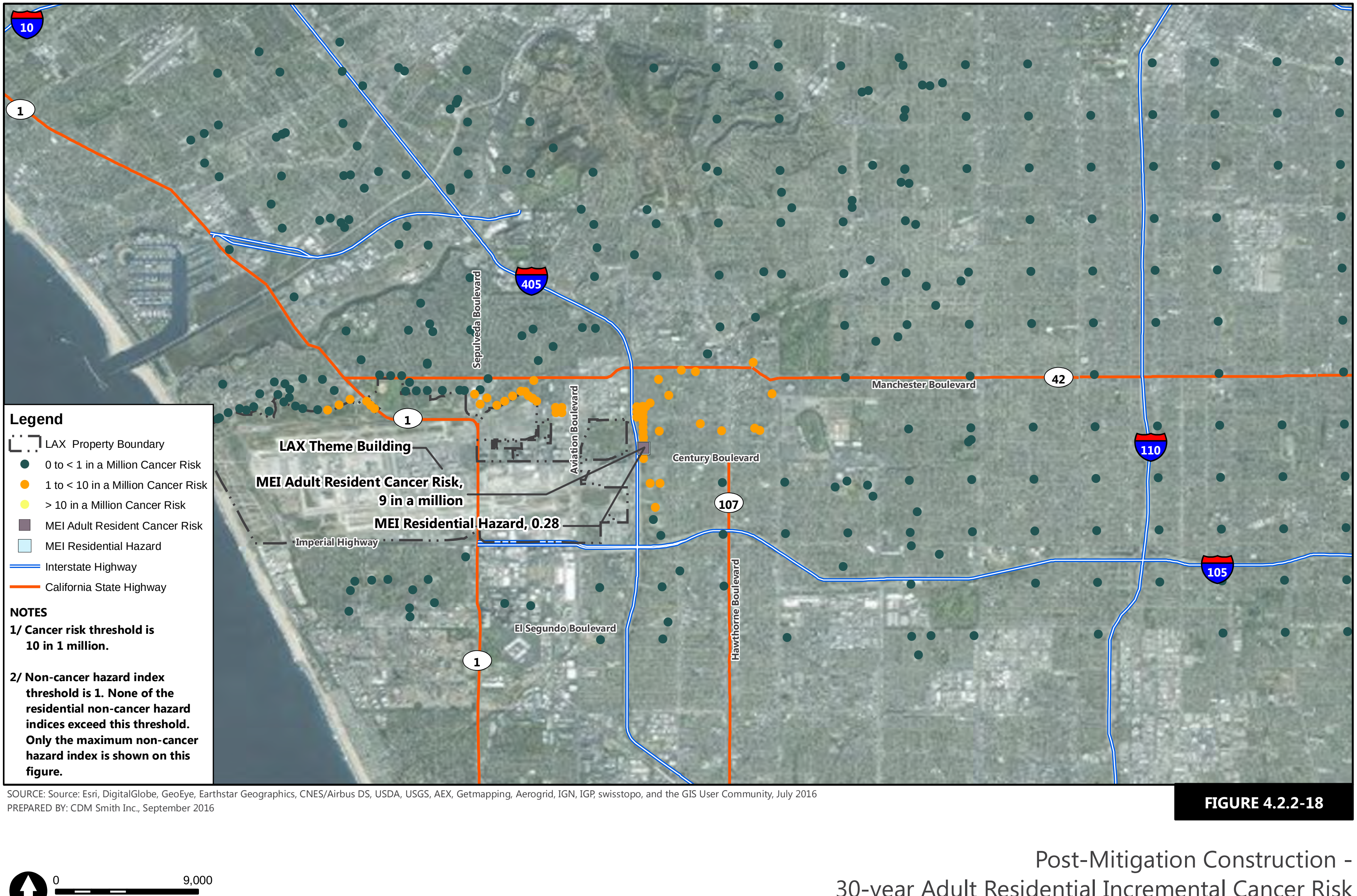
Table 4.2.2-12:Post-Mitigation Incremental Construction-Related Cancer Risks for Maximally Exposed Individuals With Mitigation

RECEPTOR TYPE	CANCER RISKS (PER MILLION PEOPLE)	THRESHOLD (PER MILLION PEOPLE)	EXCEEDS THRESHOLD?
Adult Resident, 30 years	9	10	No
Child Resident, 9 years	**9**	10	No
School Child, 12 years	4	10	No
Adult Worker, 25 years	2	10	No

SOURCE: CDM Smith, September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Residents (Adult and Child)

Mitigated incremental cancer risks for an adult resident at Peak location during construction are estimated to be 9 in one million, which is below the threshold of significance of 10 in one million. The mitigated peak cancer risk location for adult residents is shown on **Figure 4.2.2-18**.



SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-18

Post-Mitigation Construction -
30-year Adult Residential Incremental Cancer Risk

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Mitigated incremental cancer risks for a child resident at Peak location during construction are estimated to be 9 in one million, which is below the threshold of significance of 10 in one million. DPM would contribute to the majority of the cancer risk (66 percent) followed by hexavalent chromium, contributing 27 percent. DPM is primarily an emission from diesel construction equipment, haul trucks, and concrete trucks. Hexavalent chromium is primarily an emission from fugitive dust. The mitigated peak cancer risk location for child residents is shown on **Figure 4.2.2-19**.

School Child

Mitigated incremental cancer risks for children attending schools at Peak location within the study area are estimated to be 4 in one million, which is less than the threshold of significance of 10 in one million. The mitigated peak cancer risk location for school children is shown on **Figure 4.2.2-20**. The incremental cancer risk for children attending the Oak Street Elementary School is estimated to be 2 in one million, which is less than the threshold of significance of 10 in one million.

Adult Worker

Mitigated cancer risks for adult workers at Peak location are estimated to be 2 in one million. Overall, mitigated Project-related cancer risks for the proposed Project for adult workers would be below the threshold of significance. The mitigated peak cancer risk location for adult workers is shown on **Figure 4.2.2-21**.

Chronic Non-Cancer Health Hazards

Project-related chronic non-cancer hazard indices for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address chronic non-cancer hazards.

Acute Non-Cancer Health Hazards

Project-related acute non-cancer hazard indices for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address acute non-cancer hazards.

Population-Based Risk

Project-related population-based risks for construction impacts associated with the proposed Project are less than significant and no mitigation is required to address population-based risks.

4.2.2.8 Level of Significance After Mitigation

The mitigation measures identified in Section 4.2.1.7 would reduce TAC emissions associated with the proposed Project. With implementation of these measures, incremental cancer risks at off-site receptor locations would be less than the threshold of significance.

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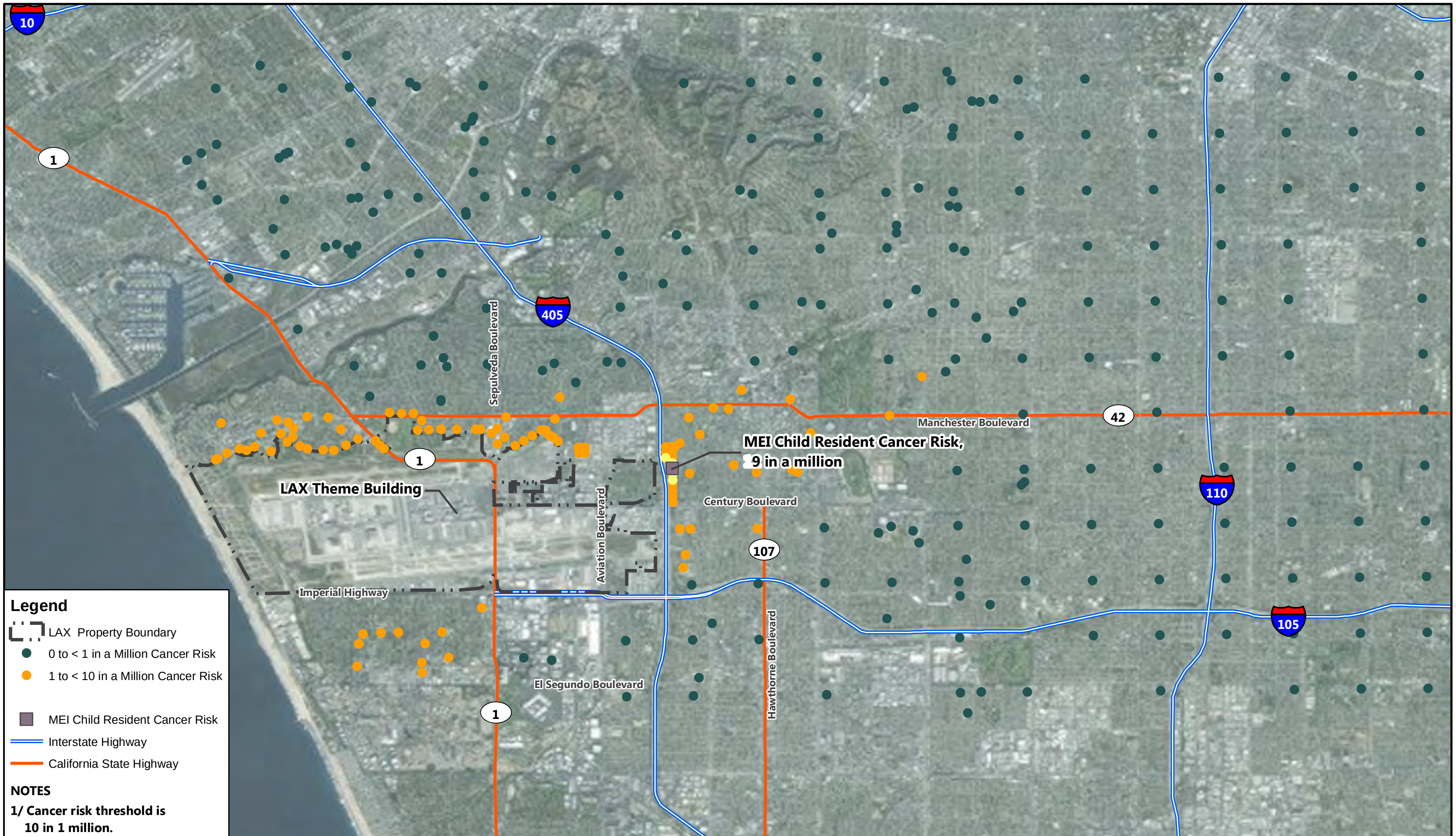

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-19

Post-Mitigation Construction -
9-year Child Residential Incremental Cancer Risk

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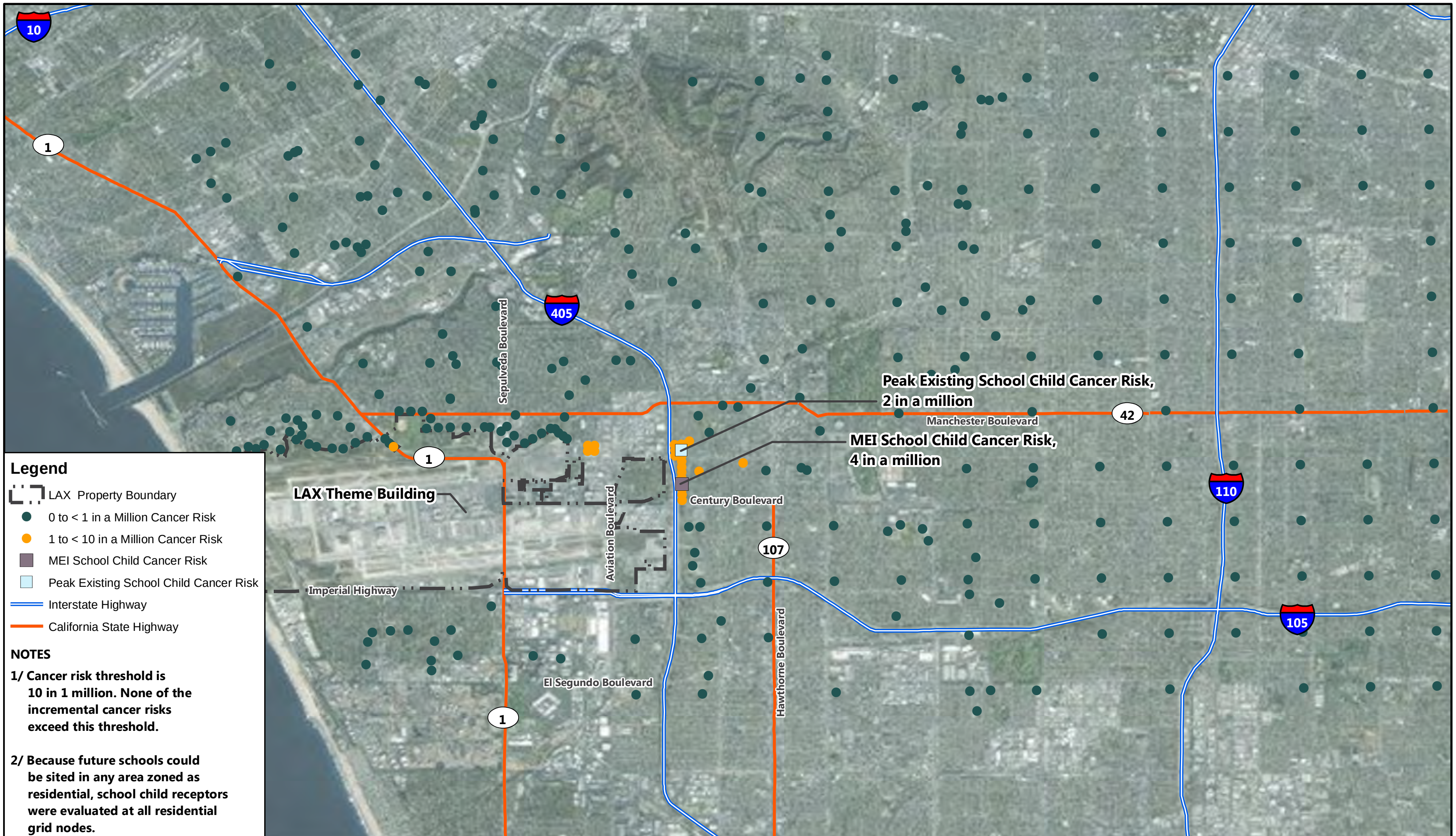

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-20

0 9,000
Feet

Post-Mitigation Construction -
12-year School Child Incremental Cancer Risk

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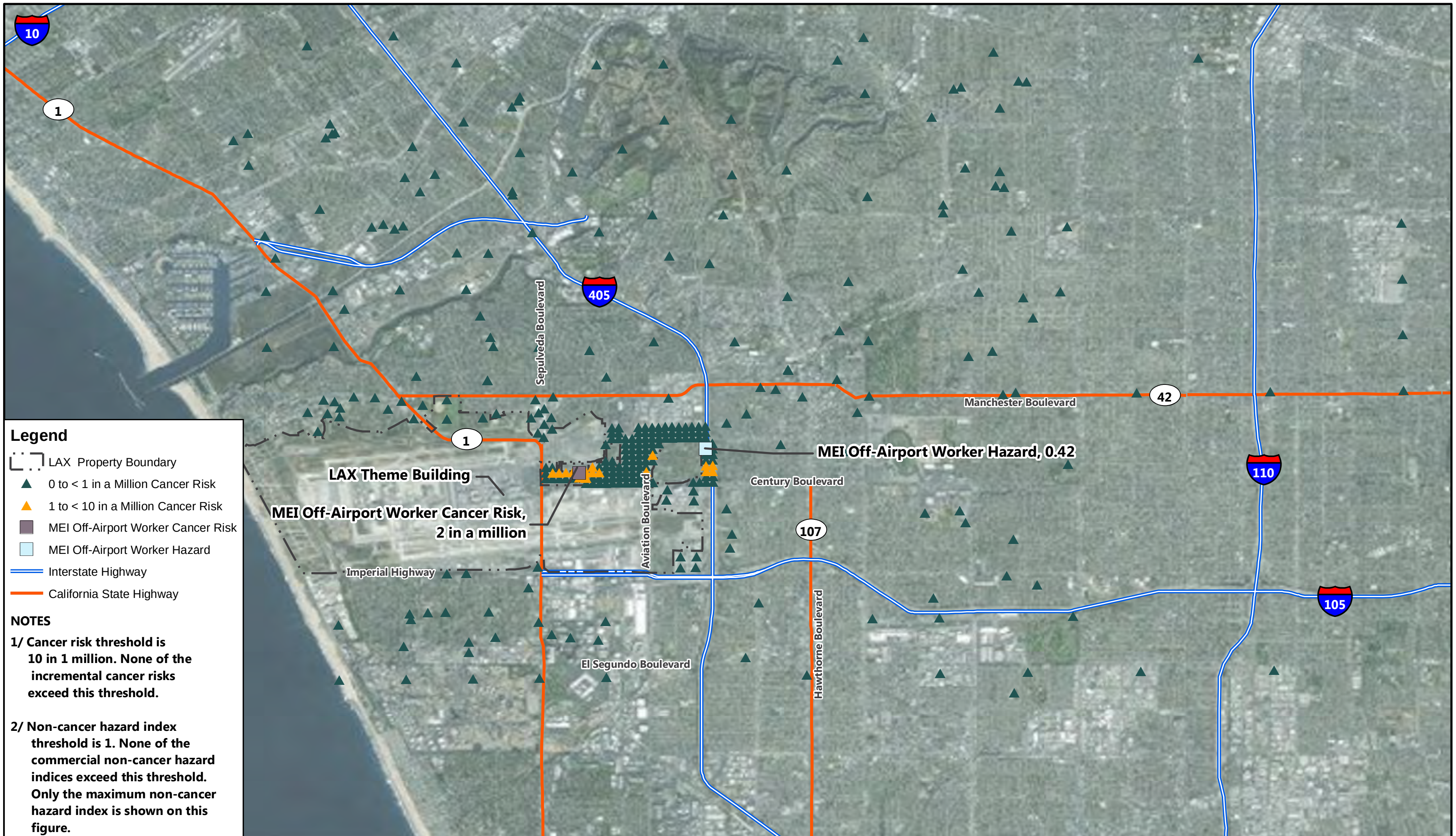

SOURCE: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, July 2016
PREPARED BY: CDM Smith Inc., September 2016

FIGURE 4.2.2-21

0 9,000
Feet

Post-Mitigation Construction -
25-year Off-Airport Worker Incremental Cancer Risk

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4.3 Biological Resources

4.3.1 INTRODUCTION

This biological resources section addresses the proposed Project's impacts on nesting birds/raptors, and trees afforded protection pursuant to federal, state, and local statutes and regulations. The existing biological resources conditions in the Project area are described, along with the methodology and the regulatory framework that guided the evaluation of biological resources. Potential impacts to biological resources that would result from the proposed Project are identified, along with any measures to mitigate significant effects of the proposed Project.

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 biological resources. The Initial Study, provided in Appendix A of this EIR, determined the proposed Project would have "no impact" related to four of the biological resource topics identified in the Initial Study Checklist Form and, for this reason, no further analysis of these topics in an EIR was required. The following Initial Study screening criteria related to biological resources do not require any additional analysis in this EIR:

- A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS).
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.
- A substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3.2 METHODOLOGY

The analysis presented in this section incorporates relevant information from the LAX Specific Plan Amendment Study (SPAS) EIR,[1] the LAX Northside Plan Update EIR,[2] and the Bradley West Project EIR.[3] Impacts on biological resources have been previously addressed in these EIRs; therefore, the analysis procedures and data from these other projects were applied and updated as appropriate for the proposed Project. In addition, a tree survey was prepared for the proposed Project in conjunction with this Draft EIR. The survey consisted of two site visits conducted on December 17 and 18, 2014. A second tree survey for the Consolidated Rental Car Facility (CONRAC) and Intermodal Transportation Facility (ITF) West areas was conducted on August 8-10, 2016.

4.3.3 EXISTING CONDITIONS

4.3.3.1 Regulatory Setting

A review of the various federal, state, regional, and local government regulatory requirements was conducted to identify regulations that provide protection of biological resources. This section summarizes the various regulatory requirements that are relevant to the proposed Project.

Federal Endangered Species Act of 1973

The Federal Endangered Species Act (ESA)[4] was enacted in 1973 and is administered by the USFWS. The ESA provides for the conservation of endangered or threatened species and conservation of the ecosystems in which they exist. Floral and faunal species that are listed as federally threatened, federally endangered, or are candidates for listing are protected under the ESA. Section 9 of the ESA prohibits the taking of species listed by the USFWS as endangered or threatened. As defined by the ESA, "taking" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in such conduct. In recognition that a "take" cannot always be avoided, the ESA includes a provision for incidental take of endangered and threatened species that occurs within the parameters of otherwise lawful activities.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA)[5] (16 U.S.C. 703 et seq.), makes it unlawful to take, capture, kill, attempt to take, capture, or kill, possess, any migratory birds, parts of migratory birds, or their eggs and nests, except when specifically authorized by the Secretary of the Interior. (16 USC §§ 703, 704.) The term “take” is defined in

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1 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study*, Section 4.3 – Biological Resources, (SCH 1997061047), January 2013.

2 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update,* Section 4.3 – Biological Resources, (SCH 1997061047), December 2014.

3 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project,* Section 4.7 – Biotic Communities, September 2009.

4 16 United States Code, Sections 1531 – 1544, as amended, Endangered Species Act of 1973.

5 16 United States Code, Sections 703-712, as amended, Migratory Bird Treaty Act.

federal regulations as meaning, "to pursue, hunt, shoot, wound, kill, capture, or collect or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." (50 CFR 10.12.) Most birds are considered migratory under the MBTA. The migratory bird species protected under the act are listed in 50 CFR 10.13. Disturbances that cause nest abandonment and/or loss of reproductive effort or loss of habitat upon which these birds depend may result in take and would be in violation of the MBTA.

FAA Advisory Circular No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports"

Advisory Circular (AC) 150/5200-33B[6] provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. The AC provides guidance on types of land uses and management of habitat within proximity to airports and proscribes management techniques for airport operators to implement in order to minimize the risk of wildlife and aircraft interactions.

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the taking, importation, or sale of state-listed endangered or threatened species except in compliance with permits or conditions specified in the CESA.[7]

The CESA also authorizes the CDFW to issue permits for incidental take of endangered or threatened species by general development activities, provided that a proposed project will not jeopardize the continued existence of such species and that any of the project's negative effects on those species will be minimized and fully mitigated. CESA authorizes CDFW to enter into a memorandum of understanding with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess species for scientific, educational, or management purposes.

"Fully protected" species

The California Fish and Game Code classifies some species as "fully protected," and "take" of these species is generally prohibited.[8] In 2011, legislation amended the Fish and Game Code to allow "take" of fully protected species covered under approved natural community conservation plans.

California Native Plant Protection Act

The California Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance endangered and rare native plants.[9] The list of native plants afforded protection by NPPA includes those listed as endangered and threatened under CESA, and the NPPA definitions of endangered and rare differ

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6 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, 2007.

7 California, Fish and Game Code, Section 2050 et. seq., California Endangered Species Act.

8 California Fish and Game Code, Sections 3511, 4700, 5050, and 5515.

9 California Fish and Game Code, Sections 1900–1913, California Native Plant Protection Act.

from those contained in CESA. However, under California Fish and Game Code Section 2062, any plant species determined by the California Fish and Game Commission (Commission) as "endangered" on or before January 1, 1985 is an endangered species under CESA and under Section 2067 any plant species determined by the Commission as "rare" is a "threatened species" under CESA. The NPPA specifies that no person shall import into this state, or take, possess, or sell within this state any endangered or rare native plant, except in compliance with provisions of NPPA.[10] Individual landowners who have been notified by CDFW of the presence of a rare or endangered plant are required to notify CDFW at least 10 days in advance of changing land uses to allow CDFW to salvage any endangered or rare native plant material.[11]

California Fish and Game Code, Sections 3503, 3503.5, 3513

The California Fish and Game Code[12] also prohibits the destruction of bird nests and eggs (Section 3503), as well as the "take" of birds of prey (Section 3503.5) and migratory nongame birds (Section 3513). Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) may violate these sections, and federal law protecting migratory birds. Section 3513 provides for consistency with rules and regulations implementing the MBTA.

Los Angeles Municipal Code, Chapter VI, Sections 62.169 and 62.170

Street trees within the public right-of-way are regulated under the Los Angeles Municipal Code, Chapter VI, Sections 62.169 and 62.170. Per Section 62.169, "No person shall plant, remove, destroy, cut, prune or deface or in any manner injure any tree, shrub or plant in any street in the City, without first obtaining a permit to do so from the Board." Section 62.170 states: "The Board may require, as a condition to any permit to remove or destroy a tree, that the permittee plant another tree of the type and size specified in the permit, within forty (40) days from the date of the issuance of the permit, in place of the tree to be destroyed or removed pursuant to the permit."

Los Angeles Protected Tree Ordinance

The City of Los Angeles passed a Protected Tree Ordinance in 2006[13] to ensure the protection and regulation of removal of protected trees. Protected trees are specified as Southern California native tree species, which measure four inches or more in cumulative diameter, four and one-half feet above the ground level at the base of the tree. The protected native tree species are:

- Oak tree including Valley Oak (*Quercus lobata*) and California Live Oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California but excluding the Scrub Oak (*Quercus dumosa*)
- Southern California Black Walnut (Juglans californica var. californica)

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10 California Fish and Game Code, Section 1908, California Native Plant Protection Act.

11 California Fish and Game Code, Section 1913, California Native Plant Protection Act.

12 California Fish and Game Code, Sections 3503, 3503.5, and 3513.

13 City of Los Angeles, Ordinance No. 177,404, Protected Tree Relocation and Replacement, April 23, 2006.

- Western Sycamore (*Platanus racemosa*)
- California Bay (Umbellularia californica)

Protected tree removal requires a removal permit by the Board of Public Works. Any act that may cause the failure or death of a protected tree requires inspection by the Los Angeles Department of Public Works, Bureau of Street Services, Urban Forestry Division.

LAX Street Frontage and Landscape Development Plan

The LAX Street Frontage and Landscape Development Plan ("Landscape Development Plan") provides integrated and coordinated landscape design guidelines for new development along the perimeter of LAX.[14] The Landscape Development Plan includes the objective to promote land use compatibility, particularly between the Airport and surrounding land uses to the north and south. The Landscape Development Plan also requires compliance with the Neighborhood Compatibility Program[15] for projects seeking LAX compliance review, which requires community input on landscape design for projects located along the northern and southern boundaries of LAX.

LAX Wildlife Hazard Management Plan

The goal of the LAX Wildlife Hazard Management Plan (WHMP)[16] is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport. The WHMP identifies hazardous wildlife attractants on or near the Airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard. For example, the grass between runways are identified as hazardous wildlife attractants at LAX that contain vegetation that are managed under the WHMP to minimize wildlife hazards at LAX. In addition, some prey species around the runways are also actively managed to minimize wildlife hazards under the WHMP. LAX holds a current Federal Fish and Wildlife Service Depredation Permit, which allows for the limited take, temporary possession, and transport of migratory birds and nests at the Airport to relieve or prevent injurious situations impacting public safety. The U.S. Department of Agriculture Wildlife Services actively manages the Airport property to reduce its attractiveness to wildlife species that may pose a safety to Airport operations.

4.3.3.2 Existing Conditions

The Project site is located in a highly urbanized area in and around LAX. As described in Chapter 3, *Overview of Project Setting*, Project improvements are primarily proposed within Airport property, including areas within and to the east of the Central Terminal Area (CTA), various developed parcels generally east of Sepulveda

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14 City of Los Angeles, Los Angeles World Airports, Environmental Management Division, *Los Angeles International Airport Street Frontage and Landscape Development Plan Update*, March 2005.

15 The Neighborhood Compatibility Program is LAX Master Plan Commitment LU-4. See Los Angeles World Airports and Federal Aviation Administration, *LAX Master Plan Final EIS/EIR*, Section 4.2.5, Land Use, Master Plan Commitments, pp. 4-173, 2004.

16 Los Angeles International Airport in cooperation with the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, *Los Angeles International Airport (LAX) Wildlife Hazard Management Plan*, December 2012.

Boulevard, areas within the largely vacant Manchester Square neighborhood, and areas along or within existing roadways associated with the proposed Automated People Mover (APM) alignment. With the exception of a few undeveloped parcels along West 96th Street, and the vacant areas within the Belford and Manchester Square areas, both of which support nonnative ruderal and ornamental vegetation with extremely low habitat value to wildlife, the Project site is almost entirely developed with airport-related or urban uses. While the Project site does not include native habitat areas that are used for wildlife movement or migration corridors, various roadways are lined with mature trees that could harbor raptor and other native birds and their nests (See **Appendix G** for tree survey reports).

Birds

Common bird species observed in the Project area, and as documented in the LAX SPAS EIR, include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macrourus*), rock pigeon (Columba livia), Anna's hummingbird (*Calypte anna*), northern flicker (*Colaptes auratus*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), yellow-rumped warbler (*Setophaga coronata*), white-crowned sparrow (*Zonotrichia leucophrys*), western meadowlark (*Sturnella neglecta*), house finch (*Carpodacus mexicanus*), and the common house sparrow (*Passer domesticus*).[17]

Trees

Tree surveys conducted by Carlberg Associates[18,19] identified 869 nonnative, ornamental and 6 native street trees within public right-of-ways, along the proposed APM alignment, on the construction staging areas, and on other portions of the Project site that would be impacted by development of the proposed Project (see Appendix G).

These trees consisted of 51 individual species, 50 of which are nonnative and commonly used in ornamental landscaping consisting primarily of carob tree, carrotwood, American sweetgum, southern magnolia, weeping bottlebrush, Mexican fan palm, callery pear, and king palm trees. Six California or western sycamore (*Platanus racemose*) trees meet the criteria for being a locally-protected tree under the City of Los Angeles Protected Tree Ordinance (Chapter IV, Article 6 of the Los Angeles Municipal Code). All six of these trees are located along Hindry Place in the Manchester Square neighborhood. However, all street trees within the public right-of-way are regulated under the Los Angeles Municipal Code, Chapter VI, Sections 62.169 and 62.170.

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17 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study*, Section 4.3 – Biological Resources, (SCH 1997061047), January 2013.

18 Carlberg Associates, *Inventory of City of Los Angeles Trees, Los Angeles World Airports Landside Transportation Program, Los Angeles, California*, January 20, 2015.

19 Carlberg Associates, *Inventory of City of Los Angeles Trees, Los Angeles World Airports Landside Transportation Program, Los Angeles, California*, August 15, 2016.

4.3.4 THRESHOLDS OF SIGNIFICANCE

Significant impacts to biological resources would occur if the proposed Project would:

- Substantially interfere with the movement of any resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.

The thresholds are derived from the *L.A. CEQA Thresholds Guide*[20] and Appendix G of the State CEQA Guidelines relative to biological resource impacts.

4.3.5 IMPACT ANALYSIS

LAX Landside Access Modernization Program Project

Construction

Street trees within areas that could be directly affected by Project construction and improvements were inventoried along the proposed APM alignment and on the construction lay-down sites. In total, data for 875 trees, including location, were recorded. These trees consist of 50 individual nonnative species commonly used in ornamental landscaping and 1 native species. Although native birds prefer native trees for nesting, the nonnative trees, as well as other ornamental vegetation, could harbor raptor and other native bird nests. Therefore, Project-related tree and other ornamental vegetation removals and/or trimming due to construction activities could result in impacts to migratory or nesting birds, or raptors protected under the MBTA and/or California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513. This impact is significant because tree and vegetation trimming or removal could substantially interfere with the movement of resident or migratory wildlife species.

A total of 869 nonnative, ornamental and 6 native street trees located within public right-of-way were inventoried along the proposed APM alignment, construction staging areas, and on other improvement areas. Six of these trees meet the criteria for being a locally-protected tree, the western or California sycamore, under the City of Los Angeles Protected Tree Ordinance (Chapter IV, Article 6 of the Los Angeles Municipal Code). Additionally, street trees within the public right-of-way are regulated under the Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170. As such, the Board of Public Works may require LAWA to plant replacement trees as a condition of construction.

Insofar as the specific limits of construction activities are not yet known, the total number of regulated street trees that could be affected by the proposed Project cannot be determined at this time. However, it is anticipated a majority of these nonnative ornamental street trees would be removed. The 6 native trees are

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20 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

located within the footprint of the proposed CONRAC and would need to be removed to allow for implementation of the proposed Project. Impacts associated with tree removal would be included as part of the Department of City Planning application and the tract map revision being filed with the Bureau of Engineering. Tree removal of protected trees would conflict with the City of Los Angeles Protected Tree Ordinance and Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170. However, LAWA would obtain the necessary permits, as required by the City of Los Angeles Protected Tree Ordinance and Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170. Thus, the proposed Project would not conflict with local policies or ordinances protecting biological resources, and impacts would be less than significant.

Operations

While the operations of the proposed Project would introduce different land uses, these uses would not create a significant change in habitat value or nesting sites. The proposed Project would involve the construction of new buildings, some of which would have windows that could pose obstacles to migratory birds. However, as there are no native or nonnative vegetated corridors in the proximity of the proposed Project, the potential impact of these structures on migratory birds is anticipated to be minimal. Additionally, lighting of these structures would be consistent with the lighting already in place in these areas and would be directed downward, minimizing the potential for these facilities to attract or disorient nocturnal migrating birds. The proposed Project would not diminish the chances for long-term survival of bird species or their habitats. Operations of the proposed Project would require landscaping maintenance activities; however, additional tree and/or ornamental vegetation removals are not planned and, as such, no significant impacts to nesting birds/raptors would occur from the operation of the proposed facilities.

While the operations of the proposed Project would require landscaping maintenance activities, additional tree removals are not planned. Should removal of street trees become necessary during Project operations, appropriate permits would be obtained. Therefore, impacts associated with operations of the proposed Project would be consistent with the City of Los Angeles Protected Tree Ordinance and Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170, and would be less than significant.

LAX Landside Access Modernization Program Potential Future Related Development

Construction

The potential future related development includes development of approximately 89 acres of property with compatible and supportive uses adjacent to the LAX Landside Access Modernization Program facilities. While specific development proposals have not been identified, the potential future related development areas are currently either developed or highly disturbed, and well removed from sensitive biological resources, with the exception of ornamental vegetation in developed areas that may support nesting birds/raptors. No wildlife movement/migration corridors are associated with any portion of the potential future related development areas. While these areas currently contain mature trees, as well as other ornamental vegetation, that could harbor raptor and other native bird and nests, this vegetation would be removed during Phase 1 as these areas would be used for construction staging and laydown. Thus, impacts to nesting birds/raptors would be less than significant.

Operations

The operations of the potential future related development would introduce different land uses; however, these uses would not create a significant change in habitat value or nesting sites. The potential future related development would involve the construction of new buildings, some of which would have windows that could pose obstacles to migratory birds. However, as there are no native or nonnative vegetated corridors in the proximity of the proposed Project, the potential impact of these structures on migratory birds is anticipated to be minimal. Additionally, lighting of these structures would be consistent with the lighting already in place in these areas and would be directed downward, minimizing the potential for these facilities to attract or disorient nocturnal migrating birds. The potential future related development would not diminish the chances for long-term survival of bird species or their habitats. Operations of the potential future related development would require landscaping maintenance activities; however, additional tree and/or ornamental vegetation removal programs are not planned, and as such, no significant impacts to nesting birds/raptors would occur from the operation of the potential future related development.

While the operations of the potential future related development would require landscaping maintenance activities, additional tree removals are not planned. Should removal of street trees become necessary during operations of the potential future related development, appropriate permits would be obtained. Therefore, impacts associated with operations of the potential future related development would be consistent with the City of Los Angeles Protected Tree Ordinance and Los Angeles Municipal Code, Chapter VI, Section 62.169 and 62.170, and would be less than significant.

4.3.6 CUMULATIVE IMPACTS

Some of the cumulative development projects described in Chapter 3, *Overview of Project Setting*, particularly the LAX Northside Development, would result in significant impacts because tree and vegetation trimming or removal could substantially interfere with the movement of resident or migratory wildlife species. The proposed Project would also result in similar significant impacts. The proposed Project and some of the cumulative development projects would involve the construction of new buildings, some of which would have windows that could pose obstacles to migratory birds. However, as there are no native or nonnative vegetated corridors in the proximity of the proposed Project, the potential impact of these structures on migratory birds is anticipated to be minimal. Additionally, lighting of these structures would be consistent with the lighting already in place in these areas and would be directed downward, minimizing the potential for these facilities to attract or disorient nocturnal migrating birds. However, other area projects in combination with the proposed Project would have a cumulatively significant impact on nesting birds/raptors and the proposed Project's contribution would be cumulatively considerable.

4.3.7 MITIGATION MEASURES

As indicated in Section 4.3.5, impacts related to nesting birds/raptors would be significant. The following Standard Control Measures are proposed as mitigation measures to reduce the proposed Project's significant impacts to nesting birds/raptors.

- **LAX-A-1. Lighting Controls**. Prior to final approval of plans for new lighting, LAWA will conduct reviews of lighting type and placement to ensure that lighting will not interfere with aeronautical lights or otherwise impair Airport Traffic Control Tower or pilot operations. Plan reviews will also ensure, where feasible, that lighting is shielded and focused to avoid glare or unnecessary light spillover.
- **LAX-BR-1 – Conservation of Faunal Resources: Nesting Birds/Raptors**. LAWA shall require construction contractors to implement the following measures:
  - Construction shall be scheduled outside of nesting season for those areas of the project site that have a potential for nesting birds/raptors, if feasible.
  - If construction is scheduled to occur during the nesting season for birds/raptors (generally February 1 to June 30 for raptors and March 15 to August 15 for other birds), vegetation clearing for the proposed Project shall be conducted outside the nesting season, if feasible.
  - If it is not feasible to schedule vegetation clearing outside of nesting season, then a qualified avian biologist ("biologist") shall inspect the shrubs/trees prior to project activities to ensure that no nesting birds/raptors are present. The qualified avian biologist shall be approved by LAWA, and shall have authority to halt construction activities if nesting birds/raptors are disturbed.
  - If the biologist finds an active nest within the construction area, or in the vicinity, and determines that the nest may be impacted, the biologist shall delineate an appropriate buffer zone; the size of the buffer zone will depend on the species and the type of construction activity. Only construction activities (if any) that have been approved by the biologist will take place within the buffer zone until the young have fledged and are independent of the adults and nest.
  - The biologist, shall be present and monitor during construction activities near active nest areas to ensure that no adverse impacts on nesting birds/raptors or young occur. The biologist shall submit weekly reports to LAWA.
  - Appropriate bird exclusion methods shall be used to discourage birds from nesting in construction equipment and facilities, if determined by the wildlife biologist to be necessary. Bird netting shall not be used as an exclusion method in order to avoid potential bird entanglement.
  - These impact avoidance measures shall be coordinated with LAWA's United States Department of Agriculture (USDA) Wildlife Hazard Biologist and will be consistent with FAA AC No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft.
- **LAX-BR–2 – Conservation of Floral Resources**: **Mature Tree Replacement – Nesting Raptors**.

  LAWA shall require construction contractors to implement the following measures:
  - Prior to construction, affected areas shall be surveyed by a qualified avian biologist (see LAX-BR-1) to identify potential areas for raptor nesting. Results of the survey shall be reported to LAWA.

- For areas of the project site that have potential for nesting raptors to occur, all mature trees within such areas shall be inspected for current or past raptor nesting activity prior to initiating construction activities during the nesting season (February 1 to June 30).
- Inspections for signs of raptor nesting may be conducted outside of nesting season. The biologist shall identify active nests, and evidence of past raptor nesting in mature trees to be removed from the construction area.
- Results of surveys and inspections shall be reported to LAWA on a timely basis.

LAWA shall compensate at a ratio of 2:1 for the loss of mature trees with either active nests or evidence of past raptor nesting, which would occur as a result of implementation of any of the project components. The species of newly planted replacement trees shall be local native tree species to the extent feasible. Each mitigation tree shall be at least a 15-gallon or larger specimen. The replacement trees shall be planted within the boundaries of LAX or at a suitable off-site location. If mitigation occurs within LAX boundaries, the replacement site and tree species will be determined in consultation with LAWA's USDA Wildlife Hazard Biologist and will be consistent with FAA AC No. 150/5200-33B "Hazardous Wildlife Attractants on or Near Airports" and LAWA's "LAX Wildlife Hazard Management Plan" to avoid increasing wildlife hazards to aircraft.

4.3.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of Standard Control Measures (Mitigation Measures) LAX-A-1, LAX-BR-1, and LAX-BR-2, significant impacts to nesting birds/raptors would be reduced to a level that is less than significant, and less than cumulatively considerable, because these measures would prevent substantial interference with the movement of resident or migratory wildlife species through protecting nesting birds/raptors and providing replacement habitat.

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4.4 Cultural Resources

4.4.1 INTRODUCTION

This cultural resources section addresses proposed Project impacts on historic, archaeological, and paleontological resources, and disturbance of human remains. The existing historic, archaeological, and paleontological resources conditions in the Project area are described, along with the methodology and the regulatory framework that guided the evaluation of historic, archaeological, and paleontological resources. Impacts to historic, archaeological, and paleontological resources that would result from the proposed Project are identified, along with any measures to mitigate significant effects of the proposed Project if needed.

4.4.2 METHODOLOGY

4.4.2.1 Historic Resources

A historic resources assessment was performed between February 2015 and December 2015 by Historic Resources Group (HRG) personnel who meet the Secretary of the Interior's Professional Qualification Standards in the disciplines of architectural history and history. Historical resources considered include prehistoric or historic buildings, sites, districts, structures, or objects that meet criteria of significance as established by the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), and local jurisdictions. Their evaluation of historic significance was based on a review of existing historic designations, research of the relevant historic contexts, and analysis of the eligibility criteria and integrity thresholds for listing in the National Register or California Register, or as a City of Los Angeles Historic-Cultural Monument (LAHCM). The historical resources assessment utilized a two-step methodology involving research and field investigation.

The research component of the assessment used primary and secondary sources related to the development history of Los Angeles International Airport (LAX) and its immediate surrounding area. Sources included historic building permits, photographs, aerials, and site plans; published local histories; previous environmental review documents for LAX; California State Historic Resources Inventory (HRI) for Los Angeles County; California Department of Parks and Recreation HRI Forms; and SurveyLA, the ongoing City of Los Angeles historic resources survey.

HRG performed on-site inspections of the Central Terminal Area (CTA) in February 2015 and of developed areas outside of the CTA in May, June, November, and December 2015. Their fieldwork focused on the assessment of historic integrity and the identification of character-defining features for structures located in areas affected or adjacent to the Automated People Mover (APM) guideway and stations, APM Maintenance and Storage Facility (MSF), parcels comprising the Intermodal Transportation Facility (ITF) and Consolidated Rental Car Facility (CONRAC) sites, and parcels that could be affected by other proposed elements of the Project including roadway improvements and enabling projects (see **Appendix H**).

4.4.2.2 Archaeological and Paleontological Resources

A cultural resource records search was conducted on December 11, 2014 at the South Central Coastal Information Center (SCCIC), which included a review of all recorded archaeological and historical resources within a half-mile radius of the Project site. A review of cultural resource reports and historic topographic maps on file was also conducted to determine what type of resources are located in the Project area, in accordance with California State Office of Historic Preservation (OHP) guidelines and professional practices. The California Points of Historical Interest (CPHI), the California Historical Landmarks, the California Register, the National Register, the California State HRI listings, and the LAHCM listings were also reviewed. The purpose of the records search was to determine whether there are previously recorded archaeological and historical resources within the study area and surrounding vicinity that require evaluation and treatment. The results also provide a basis for assessing the sensitivity of the cultural resources study area for additional and buried archaeological resources.

A Sacred Lands File (SLF) records search for the Project site was commissioned on December 30, 2014 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. The NAHC provided a list of Native American groups and/or individuals that have been identified as having affiliation with the Project area. 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 and a brief description of the proposed Project. The SLF records search was conducted to identify information as to the nature and location of additional prehistoric or Native American archaeological resources relevant to the current analysis whose records may not be available at the SCCIC.

On December 30, 2014, a paleontological resources records search was commissioned through the Vertebrate Paleontology Department at the Natural History Museum of Los Angeles County (NHMLAC). This records search entailed an examination of current geologic maps and known fossil localities on and within the general vicinity of the Project area. The purpose of the records search was to determine whether there are previously recorded paleontological resources and/or fossiliferous geologic units within the Project area. The results also provided a basis for assessing the sensitivity of the Project area for additional and buried resources.

A pedestrian survey of the undeveloped portions of the Project site was conducted on January 7, 2015. A detailed description of the methods and results of the pedestrian survey is provided in the Archaeological and Paleontological Resources Assessment Report in **Appendix I**.

4.4.3 EXISTING CONDITIONS

4.4.3.1 Regulatory Framework

Cultural historic 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); California

Environmental Quality Act (CEQA); the California Register; Public Resources Code 5024; and the City of Los Angeles Cultural Heritage Ordinance (Los Angeles Administrative Code, Section 22.171 et. seq.)[1] are the primary federal, state, and local laws governing and affecting preservation of historical resources of national, state, regional, and local significance.

4.4.3.1.1 Federal

National Register

The 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."[2] 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:

A. It is associated with events that have made a significant contribution to the broad patterns of our history;

B. It is associated with the lives of persons significant in our past;

C. 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

D. It yields, or may be likely to yield, information important in prehistory or history.[3]

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."[4] 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.

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1 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.

2 36 Code of Federal Regulations, Section 60.2, Effects of Listing under Federal Law.

3 U.S. Department of Interior, National Park Service, *National Register Bulletin 16,* Guidelines for Completing National Register Forms, revised 1997. This bulletin contains technical information on comprehensive planning, survey of cultural resources, and registration in the National Register.

4 U.S. Department of Interior, National Park Service, *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation*, 1995, p. 44.

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.[5]

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.[6]

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 any 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 § 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 § 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 State Historic Preservation Officer (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,

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5 U.S. Department of Interior, National Park Service, *National Register Bulletin* 15, *How to Apply the National Register Criteria for Evaluation*, 1995, p. 44.

6 "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.

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 archeological 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.[7]

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 USC, 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.[8]

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

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

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7 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.

8 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.

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.

4.4.3.1.2 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 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."[9] The criteria for eligibility for the California Register are based on National Register criteria.[10] 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.[11] 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.[12]

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.[13]

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9 California Public Resources Code, Section 5024.1(a).

10 California Public Resources Code, Section 5024.1(b).

11 California Public Resources Code, Section 5024.1(d).

12 California Office of Historic Preservation, *Instructions for Recording Historical Resources,* March 1995.

13 California Public Resources Code, Section 5024.1(d).

Other resources that may be nominated to the California Register include:

- Individual historical resources;
- 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.[14]

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. Historical resources that have been rehabilitated or restored may be evaluated for listing.[15] 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.[16]

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."[17] 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

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14 California Public Resources Code, Section 5024.1(e).

15 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.

16 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.

17 California Public Resources Code, Section 21084.1.

resource. State CEQA Guidelines Section 15064.5 provides that for the purposes of CEQA compliance, the term "historical resources" shall include the following:[18]

- 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 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).

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.

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[18] 14 California Code of Regulations, Section 15064.5(a), Determining the Significance of Impacts to Archaeological and Historical Resources.

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.

4.4.3.1.3 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.

LAX Archeological Treatment Plan

In accordance with LAX Master Plan Mitigation Measure MM-HA-4, Discovery, Los Angeles World Airports (LAWA) prepared an Archaeological Treatment Plan (ATP)[19] to ensure the long-term protection and proper treatment of archaeological discoveries of federal, state, and/or local significance 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

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19 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.

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

In accordance with LAX Master Mitigation Measure MM-PA-1, Paleontological Qualification and Treatment Plan, LAWA prepared a Paleontological Management Treatment Plan (PMTP).[20] 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 Cultural Heritage Ordinance

The City of Los Angeles enacted a Cultural Heritage Ordinance (Los Angeles Administrative Code, Section 22.171 et. seq.) 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.

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.

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20 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 Historic Preservation Overlay Zone

The City of Los Angeles Historic Preservation Overlay Zone (HPOZ) Ordinance[21] is a planning tool that enables the designation of historic districts. An HPOZ is an area of the city which 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.

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.

4.4.3.2 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 San 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 San formation covers half of the LAX area, beginning at Sepulveda Boulevard and extending easterly beyond the Airport. Appendix I contains the Archaeological and Paleontological Resources Assessment Report from which this discussion was derived.

The paleontological resources records search indicated that no previously recorded vertebrate fossil localities from the National History Museum of Los Angeles County (NHMLAC) database are located within the Project area. However, museum records indicate that two fossil localities are located adjacent to the Project area and five fossil localities are located within a one-half mile radius of the Project area. These fossils were discovered at depths between 13 to 40 feet below the surface. In 2013, invertebrate (shell) fossil specimens were

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[21] City of Los Angeles Ordnance No. 175,891, Historic Preservation Overlay Zone, May 12, 2004, Available: http://preservation.lacity.org/sites/default/files/Citywide%20HPOZ%20Ordinance.pdf.

encountered during construction monitoring services for the LAX Central Utility Plant Replacement Project. 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.

A pedestrian survey conducted in 2015 for the proposed Project did not identify any new paleontological resources or unique geologic features; however, much of the Project area is developed with surface parking lots, buildings, streets, and/or dense vegetation (i.e., sod, landscaping) which obstructed the surveyor's view of the native ground surface (see Appendix I). According to the NHMLAC, the study area is comprised of surficial deposits consisting of older Quaternary Alluvium derived as fluvial deposits composed from older Quaternary dune sands located in the western portion of the Project area, roughly west of Sepulveda Boulevard, and surficial deposits consisting of older Quaternary Alluvium, derived primarily from the Windsor Hills to the north and the Rosecrans Hills to the east of the Project area. Both of these types of sedimentary deposits typically do not contain paleontological resources in the uppermost layers; however, these deposits are conducive to retaining paleontological resources at depth.

4.4.3.3 Historic Resources

4.4.3.3.1 Historical Setting

As outlined in the historic resources assessment (see Appendix H), the land currently occupied by LAX, prior to its development as an airport, was part of Rancho Sausal Redondo, which had been granted to Antonio Ygnacio Avila by the Mexican government in 1837. Typical of the Spanish and Mexican land grant ranchos, the land was used for cattle ranching and sheep grazing. After the Mexican-American War (1846-1848) and subsequent annexation of California by the United States, the Rancho Sausal Redondo changed hands a number of times. In 1894, 2000 acres of the original Rancho Sausal Redondo ranch was leased to local farmer Andrew B. Bennet, which became known as the Bennett Rancho. The City of Los Angeles leased 640 acres of the Bennett Rancho in 1928 to operate Mines Field. The first permanent building at the airfield was constructed in 1929 by the Curtiss-Wright Flying School. Known as Hangar One, the building was designed by Los Angeles architects Gable and Wyant in a distinctive Spanish Colonial Revival style. Additional construction followed, until there were five hangars, a 2,000-foot-long paved runway, and administrative offices for the then Department of Aviation. Hangar One is now listed on the National Register.

Plans for a new modern airport were derailed by World War II. Wartime production activity at the aircraft manufacturing plants on and around the airport intensified dramatically. In 1942, the federal government assumed control of the airport and the Army Air Corps stationed planes and men at the field. After the war, a master plan envisioning two stages of development, an initial stage to immediately accommodate commercial operations, followed by a long-range expansion of the field, was implemented. The Intermediate Facilities, consisting of four passenger terminals, new administrative buildings, and hangars for individual airlines, were opened on the north side of the airfield in 1946.

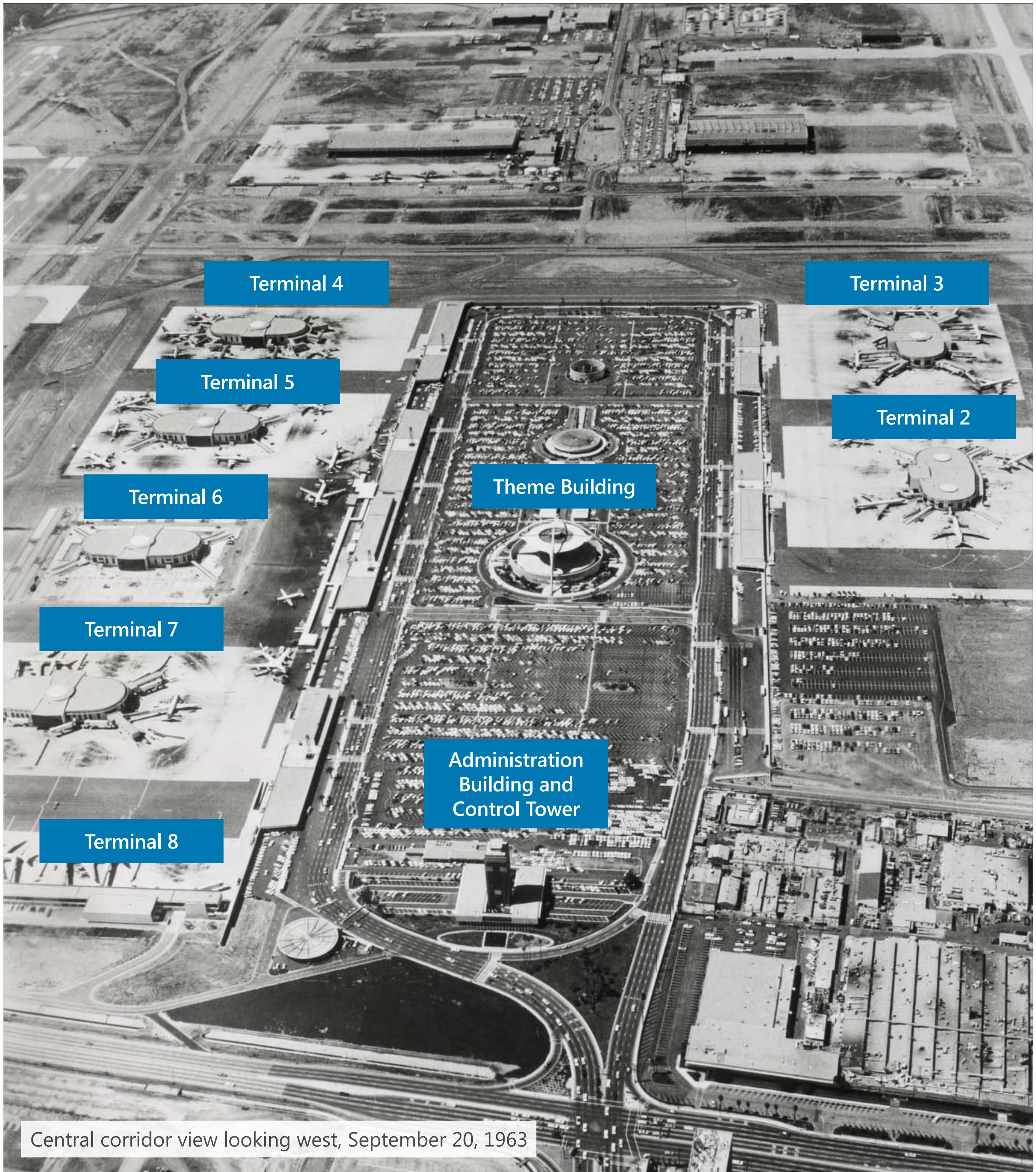
By 1947, five major airlines had opened for business at the Los Angeles Municipal Airport. The Civil Aeronautics Administration designated Los Angeles' airport an "international express class" airport after determining its facilities adequate for international, intercontinental, and non-stop domestic flights. Los

Angeles Municipal Airport was officially re-named Los Angeles International Airport (LAX) on October 11, 1949. In 1954, in the midst of the Cold War, a Nike missile surface-to-air defense battery was located by the Army on the northwest corner of the airport; it was one of several such facilities located around the Los Angeles basin.

In 1956, a new master plan for a "Jet Age" airport was developed by an architectural joint venture of architecture firms Welton Beckett and Associates and Pereira and Luckman, with Pereira and Luckman joined by Paul R. Williams. Their innovative scheme incorporated a U-shaped access road flanked by six ticketing buildings that, in turn, were connected via subterranean passageways to remote satellite buildings containing the actual boarding gates. Passenger amenities were located in the individual satellites. The center of the "U" contained parking, an administrative building surmounted by a state-of-the-art airport traffic control tower (ATCT) at the extreme east end of the site, an eye-catching Theme Building restaurant in the center of the site, and support facilities, including a cooling tower, utility plant, and service building, located west of the Theme Building, as shown in **Figure 4.4-1**. Inspired by the aesthetics of the Jet Age, the Theme Building quickly became an internationally recognized symbol and centerpiece of the new airport, distinguished by its parabolic arches from which a flying-saucer-shaped restaurant was suspended (see **Figure 4.4-2**).

Continuing growth of both commercial and freight traffic at the Airport has resulted in numerous improvements over the last few decades. These have included the development of two cargo centers, Cargo City (late 1960s) and the Imperial Cargo Complex (1980s); the Tom Bradley International Terminal (TBIT) (1984); and a new ATCT (1996). These changes are depicted in historic photographs of the CTA in HRG's Historic Resources Assessment (see Appendix H). The earlier ATCT, while considered state-of-the-art in 1961, has been altered by the removal of its original vertical aluminum louvers and the addition of metal pipe railings at each floor (see **Figure 4.4-3**). The interiors have been almost completely reconfigured and refinished. Additionally, the Administration Building which sits adjacent to the base of the ATCT has been extensively altered.

During the course of implementing these various changes, a parking lot was improved with Terminal 1 in 1984, Terminal 2 was substantially demolished and rebuilt in 1988 to its current configuration, and partial redevelopment of Terminal 3 was completed in several stages between 1980 and 1987, including a new passenger connector and baggage system linked to the existing Jet Age satellite. The redevelopment of Terminal 4 was completed in 1983, including a new passenger connector and second-level ticketing. The original satellite was also modified around 1970 to accommodate wide-bodied aircraft, as was subsequently done to Terminals 3, 6, and 7. Terminals 7 and 8 were redeveloped prior to the 1984 Olympics. Terminal 6 redevelopment was completed in 1987, and Terminal 5 in 1989, as shown in historic photographs of the CTA in Appendix H. To the west of the CTA, the airport has undergone considerable change and development during the last four decades.



SOURCE: Los Angeles World Airports, September 20, 1963.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

FIGURE 4.4-1

1963 Aerial Photograph of Central Terminal Area

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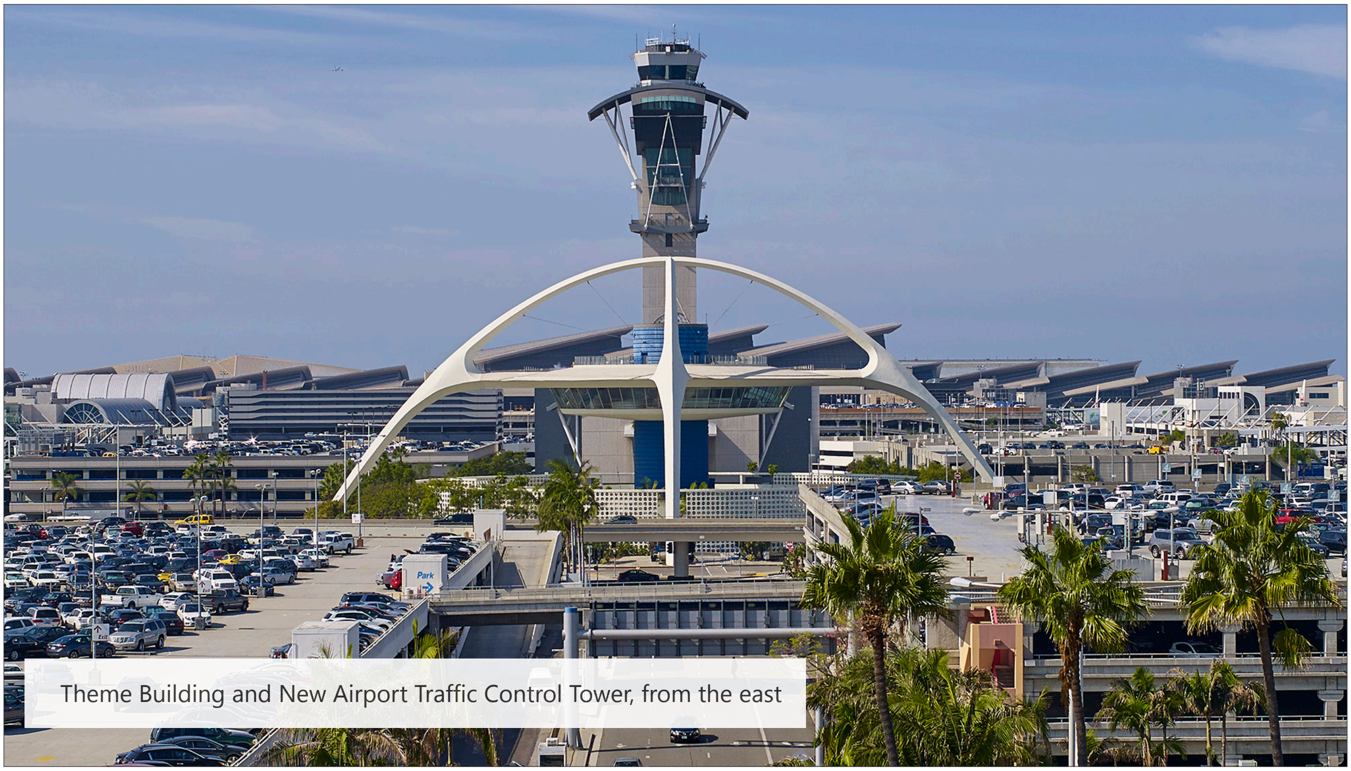

Theme Building and New Airport Traffic Control Tower, from the east

View of the Theme Building and New Airport Traffic Control Tower from the Roof of Terminal 1 (looking southwest)

SOURCE: Tavo Olmos, 2015.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

FIGURE 4.4-2

Theme Building

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1961 Airport Traffic Control Tower
as viewed from W. Century Boulevard (looking west)

SOURCE: Tavo Olmos, November 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.4-3

1961 Airport Traffic Control Tower
and Administration Building

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The evolution of the airport has resulted in the development of a surrounding industrial center. Soon after the airfield opened, a few aircraft manufacturers set up shop close to the airfield. The most notable early milestones in the growth of the aircraft industry in the vicinity were the establishment of the Douglas El Segundo plant in 1932 and the construction of the North American Aviation Inglewood factory in 1934. After the end of World War II in 1945, industries downsized. New avenues of growth were offered in the postwar period by the Korean Conflict, the growth of civilian and commercial air traffic, the replacement of the propeller-driven fleet with jet aircraft, and the Cold War with its accompanying arms and space races. The giants of the industry, such as Douglas and North American, secured new contracts, and new companies appeared.

The demand for industrial space by non-aircraft businesses also resulted in the expansion of the airport-related industrial area. One development in particular was notable. Located just east of the south runway, the International Airport Industrial District (1950–1955) was the product of the partnership of Samuel Hayden and S. Charles Lee. The two men purchased and subdivided a 95-acre parcel. Lee, a prominent architect known mostly for the design of theatres, also designed demonstration factories, customizing the façades of standardized buildings to suit the image of individual tenants. Unlike the majority of industrial improvements in the airport area, these buildings exhibited an awareness of postwar design trends.

The International Airport Industrial District has since undergone considerable change and loss of integrity as a cohesive collection of related buildings and, as such, is now considered to be ineligible for listing on the national, state, or local registers.[22] Another complex, which was distinguished by its architectural qualities, was constructed for cosmetic manufacturer Merle Norman north of the airport (1950–1951). The Merle Norman Complex is now considered eligible for listing on the National Register.[23] It is located north of Arbor Vitae Street on Bellanca Avenue, outside of the historic resource area of investigation.

4.4.3.3.2 Eligible Historic Resources

The records search for historical resources involved review of previous surveys records and reports on file. These surveys identified seven properties as either designated or potentially eligible for federal, state, and/or local designation, as well as one property that was identified but determined ineligible within the areas of investigation (see Appendix H). The area of investigation is roughly bounded by Arbor Vitae Street to the north, Century Boulevard to the south, Interstate 405 to the east, and Sepulveda Boulevard to the west. The eight previously recorded properties are described below.

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22 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, Section 4.5, Cultural Resources,* July 2012.

23 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, Section 4.5, Cultural Resources,* July 2012.

The Theme Building (1961)

The Theme Building is situated at the center of the existing concourse and terminal facilities. It was previously determined eligible for listing in the National Register under Criteria Consideration G and Criterion C for its unique architecture, which has become symbolic not only of the Airport but of the City of Los Angeles as a whole.[24] Through the prior LAX Master Plan Supplemental Section 106 process, the FAA reconfirmed that the Theme Building satisfies National Register Criterion Consideration G for exceptional significance in a building less than 50 years old (at the time of the analysis) and determined it was eligible for listing in the National Register.[25] In California, a property that has been determined eligible for listing in the National Register is automatically listed in the California Register.

Constructed in 1961–1962, the Theme Building was the centerpiece of the large expansion of LAX that converted it into a Jet Age airport. The arresting design of parabolic arches with a flying saucer-shaped restaurant suspended between them was conceived by joint venture architects William L. Pereira, Charles Luckman, Welton Becket, and Paul R. Williams. The Theme Building was designated LAHCM #570 in 1992.

1961 Airport Traffic Control Tower

Although associated with the new Los Angeles "Jet Age" International Airport of the early 1960s and associated with notable architects Pereira and Luckman, the 1961 ATCT was not, at the time of the LAX Master Plan Supplemental Section 106 Report, found to reflect the exceptional importance necessary to satisfy Criterion Consideration G (properties less than 50 years of age at the time of the survey) of the National Register criteria.[26] As discussed in more detail below, however, upon re-evaluation, this structure was determined to meet the criteria for a historic resource under CEQA.

Intermediate Terminal Facilities

The three buildings located at 6000–6016, 6020–6024, and 6040 Avion Drive are the last remaining buildings of the Intermediate Terminal Facility, constructed between 1945 and 1947 to temporarily house airport administration and airline offices, passenger terminals, hangars and aircraft service facilities. The Intermediate Terminal Facility buildings lined Avion Drive, which looped around a central surface parking lot south of Century Boulevard. The facility originally consisted of four wood-frame buildings: one housing the airport administration, weather service and Civil Aeronautics Administration; and the other three serving as passenger terminals. Additional buildings were constructed by airlines for their own offices and hangars. The three surviving buildings are part of the latter group. Each originally consisted of two stories of airline administrative offices facing Avion Drive, with hangars behind.

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24 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, Section 4.5, Cultural Resources,* July 2012.

25 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Appendix I, Section 106 Report*, January 2001, and *Appendix S-G, Supplemental Section 106 Report,* June 2003.

26 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Appendix S-G, Supplemental Section 106 Report,* June 2003.

The surviving Intermediate Terminal Facility buildings represent an important milestone in the evolution of LAX. The grouping is therefore significant under National Register Criterion A, California Register Criterion 1, and LAHCM criteria for its association with events that have made a significant contribution to the broad patterns of Los Angeles history. Two of the buildings, 6000–6016 and 6020–6024 Avion Drive, have undergone some alterations but retain a good degree of integrity. The third building, 6040 Avion Drive, which was originally the headquarters of Western Airlines, has been extensively altered with large additions at the rear and a complete reconstruction of its primary façade, and therefore no longer retains sufficient integrity to convey its historic significance. 6000–6016 and 6020–6024 Avion Drive were previously found eligible for listing in the California Register and for designation as a LAHCM in 2001 as part of the environmental review for the LAX Master Plan.

Because of the demolition of the majority of the Intermediate Terminal Facility buildings, including the passenger terminals, and alterations to the remaining buildings, especially the extensive alterations to 6040 Avion Drive, the surviving grouping does not retain sufficient integrity for listing in the National Register. However, resources lacking sufficient integrity for listing in the National Register may still be eligible for listing in the California Register. The grouping of the two intact, surviving Intermediate Terminal Facility buildings at 6000–6016 and 6020–6024 Avion Drive retains sufficient integrity to convey its historic significance and is therefore eligible for listing in the California Register and as a LAHCM.

Airport Century Building

The mid-rise office building at 9841 North Airport Boulevard was constructed in 1968. It was designed by the architectural firm of Welton Beckett & Associates as part of the International Airport Center commercial development located on the north side of Century Boulevard, just east of the CTA. The Airport Century Building was found eligible for the National Register and California Register, and for local listing by SurveyLA in 2013.[27] The building was found significant as an excellent example of Corporate International architecture.

Tishman Airport Center Building

The 12-story office building at 5959 West Century Boulevard was designed by Welton Beckett & Associates as part of the International Airport Center commercial development located on the north side of Century Boulevard just east of the CTA. Constructed in 1966, this mid-rise commercial office building was found eligible for the National Register and California Register, and for local listing by SurveyLA in 2013.[28] The building was found significant as an excellent example of Corporate International architecture.

The McCulloch Building

This 12-story office building at 6151 West Century Boulevard was designed by Welton Beckett & Associates as part of the International Airport Center project. Constructed in 1964, this mid-rise commercial office building

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27 Historic Resources Group, *LAX Landside Access Modernization Program, Historic Resources Technical Report*, August 2016. (Appendix H of this Draft EIR)

28 Historic Resources Group, *LAX Landside Access Modernization Program, Historic Resources Technical Report,* August 2016. (Appendix H of this Draft EIR)

was found eligible for the National Register and California Register, and for local listing by SurveyLA in 2013.[29] The building was found significant as an excellent example of Corporate International architecture.

Union Savings and Loan

The eight-story office building at 9800 South Sepulveda Boulevard was originally constructed for Union Savings and Loan in 1964. The building was designed by Welton Beckett & Associates as part of the International Airport Center commercial development located on the north side of Century Boulevard just east of the CTA. This mid-rise commercial office building was identified as eligible for the California Register and for local listing through survey evaluation in 2012.[30] The Union Savings and Loan Building was found significant as an example of the New Formalist architectural style as applied to a bank building, and as a representative example of the work of master architects Welton Beckett & Associates.[31]

Air Raid Siren

Located on the south side of West 98th Street just east of Airport Boulevard, this rotating air raid siren on a freestanding pole was identified as eligible for the National Register and California Register, and for local designation by SurveyLA in 2013.[32] Constructed in 1940, the siren was evaluated as historically significant for its association with World War II and Cold War military infrastructure.

As part of the Project evaluation process, an evaluation of historical resources that are considered potentially historically significant and potentially eligible for listing in the National Register or California Register, or as LAHCMs was conducted. Field investigation identified one additional property within the CTA area, the Terminal 6 Sign Tower, and four additional properties outside the CTA area that appear to meet the criteria for designation as historic resources. The four additional properties outside the CTA area include the Quonset Hut, Regional Post Office Facility, Airport Marriott Hotel and the Aircraft School Property. Additionally, the 1961 ATCT, which was previously determined ineligible, was reevaluated and determined that it does meet the criteria for designation as a historic resource. The newly identified properties and the reevaluation of the 1961 ATCT are discussed below. The results of the February 2015–February 2016 historic resources assessment are documented in Appendix H. A listing of the eligible properties identified is provided in **Table 4.4-1** and the properties are depicted on **Figure 4.4-4**.

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29 Historic Resources Group, *LAX Landside Access Modernization Program, Historic Resources Technical Report,* August 2016. (Appendix H of this Draft EIR)

30 Historic Resources Group, *LAX Landside Access Modernization Program, Historic Resources Technical Report,* August 2016. (Appendix H of this Draft EIR)

31 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study, Appendix E-1, Cultural Resources Documentation*, July 2012. DPR forms 523A, 523B, and 523L for 9800 S. Sepulveda Boulevard, December 14, 2011.

32 City of Los Angeles, Department of City Planning, *SurveyLA Historic Resources Survey Report: Westchester–Playa Del Rey Community Plan Area,* November 27, 2013, p. 31.

[Draft]

Table 4.4-1: Eligible Historical Resources within the Historical Resources Areas of Investigation

MAP ID NO. (FIG. 4.4-4)	PROPERTY	LOCATION	YEAR BUILT	NR	CR	LAHCM
1	The Theme Building 201 World Way	CTA	1961–1962	Eligible	Listed	Listed
2	1961 Airport Traffic Control Tower[1/] 1 World Way	CTA	1961	Ineligible	Ineligible	Eligible
3	Terminal 6 Sign Tower World Way	CTA	1962	Ineligible	Ineligible	Eligible
4	Intermediate Terminal Facilities 6000–6016 and 6020–6024 Avion Drive	Outside CTA	1945–1947	Ineligible	Eligible	Eligible
5	Airport Century Building 9841 N. Airport Boulevard	Outside CTA	1968	Eligible	Eligible	Eligible
6	Tishman Airport Center Building 5959 W. Century Boulevard	Outside CTA	1966	Eligible	Eligible	Eligible
7	The McCulloch Building 6151 W. Century Boulevard	Outside CTA	1964	Eligible	Eligible	Eligible
8	Union Savings and Loan 9800 S. Sepulveda Boulevard	Outside CTA	1964	Ineligible	Eligible	Eligible
9	Air Raid Siren	Outside CTA	1940	Eligible	Eligible	Eligible
10	Quonset Hut 6030 Avion Drive	Outside CTA	1947	Eligible	Eligible	Eligible
11	Regional Post Office Facility 5800 W. Century Boulevard	Outside CTA	1967	Ineligible	Eligible	Eligible
12	Airport Marriott Hotel 5855 W. Century Boulevard	Outside CTA	1972	Ineligible	Ineligible	Eligible
13	Aircraft School Property 9700 S. Sepulveda Boulevard	Outside CTA	1941–1945	Eligible	Eligible	Eligible

NOTES: NR = National Register of Historic Places; CR = California Register of Historical Resources; LAHCM = Los Angeles Historic-Cultural Monument.

1/ Due to extensive alteration of the 2-story Administration Building portion and alterations to the Tower portion, the building no longer retains integrity of design, setting, materials, or workmanship and therefore does not retain sufficient integrity to be eligible for listing in the National Register under Criteria A or C. Given the overall alteration of its architectural design, the building is also not eligible for listing in the California Register under Criterion 1 or 3.SOURCE: Historic Resources Group, *LAX Landside Access Modernization Program, Historic Resources Technical Report*, August 2016. (Appendix H of this Draft EIR)

PREPARED BY: Ricondo & Associates, Inc., February 2016.

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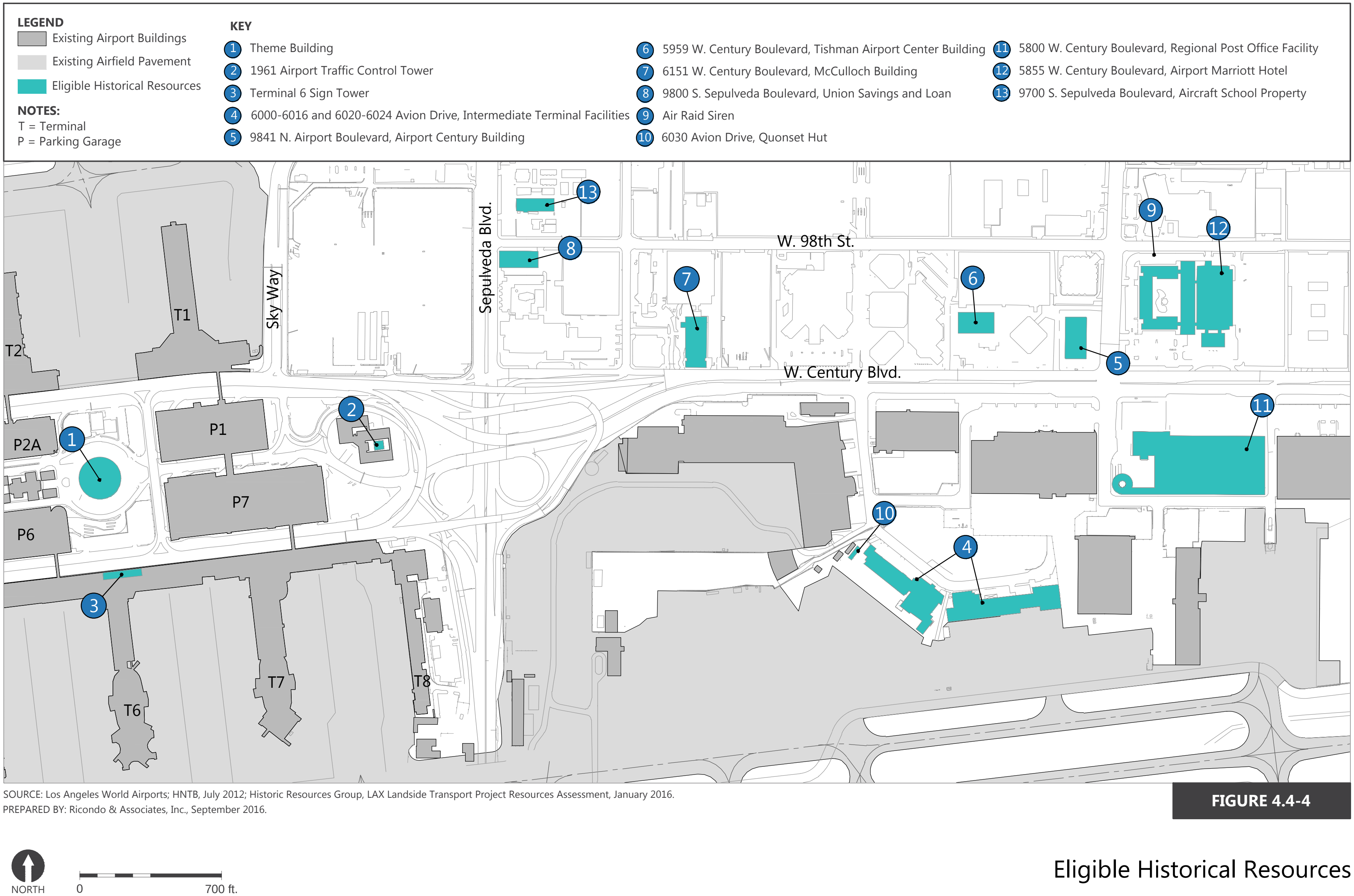

SOURCE: Los Angeles World Airports; HNTB, July 2012; Historic Resources Group, LAX Landside Transport Project Resources Assessment, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.4-4

Eligible Historical Resources

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1961 Administrative Building and Airport Traffic Control Tower

The 1961 Administration Building and ATCT have been extensively altered, particularly the 2-story Administration Building portion. Alterations to the Administrative Building include enclosure of its ground floor; partial enclosure of the original interior courtyard; enclosure of the original glass-walled, second-story bridges that connected the north and south office wings; the removal of the original exterior mosaic tile wall cladding and horizontal window canopies on the north and south façades; and the construction of a large 2-story addition to the northwest.

The Tower portion has been altered by the removal of the original aluminum vertical louvers and the addition of metal pipe railings at each floor but continues to retain several original features, including its square plan, 13-story height, and flat roof; control cab with angled, continuous, fixed aluminum-framed ribbon windows and surrounding roof deck; scored cement plaster spandrels; continuous aluminum grates; exposed concrete piloti (a set of posts raising a building up from the ground), elevator/stair shaft, and screen wall at ground floor; and its second-story bridge to the Administration Building with ceramic mosaic tile wall cladding and aluminum-framed clerestory window. The original immediate surroundings and landscape have also been completely altered. Although the 1961 ATCT and Administration Building are connected by a bridge on the second-story, the ATCT is structurally separate from the Administration Building.

Due to extensive alteration of the 2-story Administration Building portion and alterations to the Tower portion, the building no longer retains integrity of design, setting, materials, or workmanship and therefore does not retain sufficient integrity to be eligible for listing in the National Register under Criteria A or C. Given the overall alteration of its architectural design, the building is also not eligible for listing in the California Register under Criterion 1 or 3 (see Appendix H).

Because the Tower retains its vertical form and control cab, it is still recognizable as a control tower from the period of significance. Despite alterations, it continues to retain integrity of location, feeling, and association. The Tower remains in its original location at the western entry into the CTA and continues to convey its historic association with the Jet Age redesign of LAX and the transformative effects of jet travel. For these reasons, the Tower does appear eligible for local listing as an LAHCM.

Terminal 6 Sign Tower

The original 1962 sign tower for Terminal 6 is a freestanding, 4-story tube steel sign tower bearing the terminal's numerical designation. Of the six original terminal sign towers, four have been extensively altered, truncated, and relocated, and one is nonexistent. However, the one remaining intact and in situ sign tower appears eligible for listing as a historic resource. The Terminal 6 sign tower is not eligible for the National Register or California Register as an individual resource, but it does appear eligible for listing as an LAHCM as the last terminal identification sign remaining from the period of significance.

Quonset Hut

The building located at 6030 Avion Drive, built in 1947, is a rare surviving example of a World War II–era Quonset hut, an innovative and highly versatile prefabricated building type originally developed by the British Army during World War I. The design was adapted by the U.S. Navy during World War II as a standard building unit—inexpensive, easy to ship, easy to erect, and versatile in accommodation—ideal for use as troop housing and materials storage at remote new installations where building materials and skilled workers were not available.[33] Named after the Navy base at Quonset Point, Rhode Island, the Quonset hut is a semi-cylindrical structure constructed of corrugated steel sheeting placed atop arched wood or metal rib framing. Typical features include oversized doors and steel-frame industrial windows. Due to the portability and versatility of this building type, in the postwar years the Quonset hut was adapted for a wide variety of everyday peacetime uses and functioned as housing, churches, supermarkets, barns, retail spaces, restaurants, garages, and industrial factories.[34] Therefore, due to its historic significance, rarity of building type, and good level of integrity, the Quonset hut is eligible for listing in the National Register under Criterion C, in the California Register under Criterion 3, and as an LAHCM.

Regional Post Office Facility

The Regional Post Office Facility located at 5800 West Century Boulevard, also known as the Worldwide Postal Center, was constructed in 1967 as part of LAX's new air mail and freight facilities, an eight-and-one-half acre complex known as "Cargo City." The building, the first post office located at a major U.S. airport, was designed to handle air mail and cargo and thus relieve congestion at the downtown Terminal Annex.[35] The two-story building is Late Modern in style. It is of expressed concrete frame construction with concrete masonry infill and features a sculptural circular automobile ramp leading to a rooftop parking deck. It retains a high degree of integrity.

The building was designed by the prominent architecture and engineering firm of Daniel, Mann, Johnson, and Mendenhall (DMJM) under the firm's then-Director of Design, Cesar Pelli, FAIA (Fellow of the American Institute of Architects), and Principal for Design, Anthony J. Lumsden, FAIA.[36] Both architects had previously worked in the office of Eero Saarinen and Associates, and each later gained prominence as principal of his own firm. Pelli's firm, now known as Pelli Clarke Pelli, has designed many prestigious international commercial, civic, and institutional projects, including the World Financial Center in New York, the Petronas Towers in Malaysia, and the Pacific Design Center in West Hollywood. In 1995, the American Institute of Architects awarded Pelli its Gold Medal, the organization's highest honor for an individual.[37]

The Regional Post Office Facility is significant under National Register Criterion A and California Register Criterion 1 for its association with the dramatic increase in air mail and freight and the growth of LAX in the 1960s. It is also significant under National Register Criterion C and California Register Criterion 3 as an

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33 "Camp Endicott, Davisville Construction Battalion Center," National Register of Historic Places Nomination Form, December 21, 1977, Available: http://www.preservation.ri.gov/pdfs_zips_downloads/national_pdfs/north_kingstown/noki_camp-endicott-hd.pdf.

34 City of Santa Monica, Planning Division, *Quonset Huts, 829 Broadway, Santa Monica, California City Landmark Assessment Report*, November 2007.

35 Los Angeles Conservancy, "It's a Mod, Mod, Mod, Mod City," 2009, p. 7.

36 Gebhard, David and Robert Winter, *An Architectural Guidebook to Los Angeles*, Revised Edition, Salt Lake City: Gibbs, Smith Publisher, 2003, p. 78.

37 Pelli Clarke Pelli Architects, "Firm Overview," Available: http://www.pcparch.com/firm/overview, accessed January 13, 2016.

excellent example of Late Modern architecture by the prominent firm of DMJM, under the direction of Cesar Pelli and Anthony J. Lumsden. The building is not yet 50 years old and is not of exceptional importance; therefore is not eligible at this time for listing in the National Register of Historic Places. However, it is eligible for listing in the California Register and as an LAHCM.

Airport Marriott Hotel

The hotel property, located at 5855 West Century Boulevard, was constructed in 1972 as the Airport Marriott Hotel and officially opened in September of 1973. It was reportedly the first Marriott hotel in California and the largest hotel property built by Marriott at the time of its construction.[38] Rectangular in plan, the property includes three five-story wings and an 18-story tower wing wrapping a central patio area with swimming pool. A two-story rectangular space containing dining, retail, meeting spaces, and other guest amenities sits east of the tower wing. The primary entrance facing Century Boulevard includes a projecting flat-roofed porte-cochere accessed by a U-shaped driveway. It was reportedly designed by Marriott corporate architects.

The Airport Marriott Hotel has not been previously identified as historically significant but it appears to retain the majority of its original features and appears to be significant on the local level as a rare, intact example of a large hotel property from the early 1970s. Constructed in 1973, the Airport Marriot Hotel is 42 years old and does not appear to be of "exceptional importance" required under National Register Criteria Consideration G for properties less than fifty years of age. Therefore, the Airport Marriott Hotel is not eligible for listing in the National Register at this time. For similar reasons, the Airport Marriott Hotel does not appear eligible for the California Register at this time because there is no substantial scholarly research on the commercial architecture of the 1970s outside of the work of specific architects. The property does appear to be a rare, intact example of a large hotel and convention property from the 1970s and is therefore eligible as an LAHCM.

Aircraft School Property

The property at 9700 South Sepulveda Boulevard contains a handful of modest single-story buildings set within an expanse of surface parking. The largest of the buildings is rectangular in plan, with a bow-truss roof and monitor, horizontal wood cladding, and metal-frame, multi-light casement windows. The building is constructed in a vernacular/industrial style. Two smaller buildings with gable roofs and a rectangular masonry building with a flat roof and attached shade canopy are clustered just south of the bow-truss roof building. A rectangular building of more recent vintage is set apart from the others at the northwest corner of the site.

The property was originally developed by the Los Angeles City High School District in 1941 for use as a National Defense Training School. A single, rectangular wood and metal truss-roof building was constructed. According to the 1941 permit, no other buildings or structures were present on the site prior to this construction.

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38 Los Angeles Times, "Party Celebrates Opening of Hotel," September 10, 1973.

In 1945 and 1948, permits indicate additional buildings were constructed, and interior alterations were done to the original building. Beginning in 1945, the property is referred to as the Los Angeles City Aircraft School, with the Los Angeles City School District as its owner. Permits indicate several school buildings present on site. The May 1950 Sanborn map shows the original bow-truss roof building, a small hangar building, a smaller fireproof shop building, and two U-shaped classroom buildings clustered together within a large surface parking lot.

Since 1950, it appears that the site continued operation as an aircraft construction and repair training school, most recently as the Los Angeles College Aircraft School. Several additional rectangular buildings located immediately north of the bow-truss building were present as late as November of 2014. They have since been removed. The property is today largely used for temporary parking.

Evidence suggests that the property has a long historic association with training in the aircraft trades in service of the explosive post–World War II growth of the aerospace industry in Southern California. Constructed for civil defense training just eight months prior to the Japanese attack of Pearl Harbor, the property may also have direct associations with the war effort. As such, it appears the property is eligible under National Register Criterion A, California Register Criterion 1, and LAHCM criteria as a rare, intact example of an aircraft training facility from the 1940s. The property is representative of the 20th century development of aircraft and aerospace related industries and services that clustered near the airport beginning with the establishment of Mines Field. Aircraft-related development around the airport greatly intensified during and after World War II. Consolidation of the aerospace industry towards the end of the 20th century caused much of this activity to relocate to more favorable locations, while the continued expansion of LAX resulted in much of the surrounding property being turned over for parking, rental car facilities, and lodging.

Intensive on-site investigation of the property was not conducted by HRG. It appears, however, that only the rectangular bow-truss building appears to have retained sufficient integrity to convey the historic significance of the property.

4.4.3.4 Archaeological and Paleontological Resources

4.4.3.4.1 Archaeological 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.[39] 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.[40] Additional information regarding Paleoindian and other periods described below is provided in Appendix I.

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.[41] 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.[42] Artifact assemblages with this equipment include basin millingstones and unshaped manos, or grinding slabs used to process small, hard seeds from 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.[43] 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.[44,45] Work at Cole Canyon and other sites in southern

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39 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.

40 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 this Draft EIR)

41 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.

42 Moratto, Michael J., *California Archaeology*, Academic Press, San Diego, p. 158, 1984.

43 Meighan, C.W, "A Late Complex in Southern California Prehistory," *Southwestern Journal of Anthropology* 10:215–227, 1954.

44 Meighan, C.W, "A Late Complex in Southern California Prehistory," *Southwestern Journal of Anthropology* 10:223, 1954.

45 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.

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. [46]

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[47], 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.[48] 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.[49] 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[50], 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.

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

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46 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.

47 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 538, 1978.

48 Sutton, Mark Q., "People and Language: Defining the Takic Expansion into Southern California," *Pacific Coast Archaeological Society Quarterly,* 41(2&3): 31-93, 2009.

49 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, pp. 540-541, 1978.

50 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 540, 1978.

wood planks and asphaltum. The Gabrielino fishing equipment included fishhooks made of shells, nets, basketry traps, and poison substances obtained from plants.[51]

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.[52] 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.[53] 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.[54]

4.4.3.4.2 Previously Recorded Archaeological Resources

Results of the records search from the SCCIC indicated no archaeological resources have been recorded within the Project area and 11 archaeological resources have been previously recorded within a half-mile radius. The Project area includes all areas where Project improvements are proposed including potential construction staging and laydown areas. Additionally, the record search was conducted within a half-mile radius of the Project area. The 11 resources are summarized in **Table 4.4-2**. These resources include both archaeological resources from the prehistoric and historic period. None of these resources would be impacted by the proposed Project.

The records search also indicated that more than 15 cultural resource studies have been conducted within the study area. These studies were conducted for various projects across LAX from 1974 to 2005 and encompass approximately 50 percent of the Project area footprint.

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51 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 546, 1978.

52 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

53 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

54 Bean, L.J., and C.R. Smith, "Gabrielino," in *Handbook of North American Indians*, Volume 8, R.F. Heizer, Washington, DC: Smithsonian Institution, p. 547, 1978.

Table 4.4-2: Archaeological Resources within One-Half Mile Radius of the Project Area

RESOURCE DESIGNATION	DESCRIPTION	STATUS CODE
CA-LAN-202	Contents of resource unknown; currently does not exist on surface	6Z
CA-LAN-214	"Small site" consisting of "points"; paved over with single family residences	6Z
CA-LAN-691	Shell scatter recorded in 1972; likely displaced from subsequent airport activities	6Z
CA-LAN-1118	Shell midden with lithic debitage; likely displaced from subsequent airport activities	6Z
CA-LAN-2345	Large prehistoric site (tools, faunal remains, shell, fire-affected)	3CS
CA-LAN-2385H	Historic debris (concrete, window glass, asphalt, brick, plaster, and metal fragments)	6Z
P-19-100115	Isolated prehistoric chipped stone tool	6Z
P-19-100116	Isolated prehistoric chipped stone flake (quartzite)	6Z
P-19-004352	Sewer pipe fragments, railroad ties, metal spikes, and iron pipe (3-8 ft below surface)	7
P-19-004353	1940s to 1950s bottle deposit (at depth during monitoring)	7
P-19-004354	1950s bottle, mammal bones, and shell (4 feet below surface during monitoring)	7

NOTES:

3CS – Appears eligible for California Register of Historical Resources through survey evaluation

6Z – Found not eligible for California Register of Historical Resources through survey evaluation

7 – Not evaluated

6ZNRHP = National Register of Historic Places

SOURCE: 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 this Draft EIR)

PREPARED BY: Ricondo & Associates, Inc., July 2016.

4.4.3.4.3 Previously Recorded Paleontological Resources

The records search from the Vertebrate Paleontology Department at the NHMLAC indicated that there were no known paleontological localities within the Project area. However, museum records indicated that two fossil localities (LACM 3264 and LACM 7332) were recorded adjacent to the Project area and five fossil localities (LACM 3789, LACM 7332, LACM 8734, LACM 1180, and LACM 4942) were recorded within a one-half radius of the Project area. These fossils were discovered at depths between 13 to 40 feet below the surface and are summarized in **Table 4.4-3**.

Table 4.4-3: Vertebrate Fossil Localities in the Vicinity of the Project Area

LOCALITY NUMBER AND APPROXIMATE LOCATION	TAXA	COMMON NAME
LACM 3264, near the Tom Bradley International Terminal at LAX	Prodoscidea	Baby elephant
LACM 7332, south of West 98th Street and west of Bellanca Avenue	*Mammuthus* sp.	Baby mammoth
LACM 3789, 9734 Bellanca Avenue south of Manchester Avenue	*Mammuthus* sp. Rodentia *Citharichthys sitigmaeus*	Mammoth Rodent Speckled sanddab
LACM 1180 and LACM 4924, northwest and southeast sides respectively of Airport Boulevard at the intersection with Manchester Avenue	*Equus* sp. *Mammuthus* sp. *Lepus* sp.	Horse Mammoth Rabbit

SOURCE: 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 this Draft EIR)
PREPARED BY: Ricondo & Associates, Inc., July 2016.

In 2013, PCR also encountered invertebrate (shell) fossil specimens during construction monitoring services for the LAX Central Utility Plant Replacement Project. 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.

4.4.3.4.4 Sacred Lands File Search and SB 18 Native American Consultation[55]

Results of the updated SLF search through the NAHC did not indicate any newly inventoried Native American cultural resources within the Project area (see Appendix I). 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.[56] Pursuant to NAHC suggested procedure, letters were sent via certified mail on January 14, 2015 to the nine Native American individuals and organizations (from the Gabrielino/Tongva tribes) identified by the NAHC as being affiliated with the vicinity of the Project area to request any additional information or concerns they may have about Native American cultural resources that may be affected by the proposed Project. As of August 31, 2016, only one response has been received. On February 12, 2015, Mr. Andy Salas of the Gabrielino Band of Mission Indians requested that a Native American monitor be retained to observe excavation activities associated with the proposed Project due to the identification of Native

[55] Because the Notice of Preparation for the LAX Landside Access Modernization Program was issued prior to July 1, 2015, LAWA is not required to comply with AB 52, which was adopted in 2014 to create new provisions in the Public Resources Code to ensure California Native American tribes, local governments, public agencies, and project proponents have the necessary information to identify potential impacts a project may have on tribal cultural resources. However, because the LAX Landside Access Modernization Program includes amendment of the Los Angeles General Plan and the LAX Specific Plan, LAWA has complied with SB 18, which requires cities and counties to consult with California Native American tribes prior to adoption or amendment of a general or specific plan.

[56] Sanchez, Katy, State of California, Native American Heritage Commission to Christopher W. Purtell, PCR Services Corporation, regarding Landside Transportation Program at Los Angeles International Airport, City of Los Angeles, Los Angeles County, January 8, 2015.

American cultural resources in the general area. As set forth in Section 4.4.7.2 below, if Native American cultural resources are encountered, LAWA shall comply with guidance established in LAWA's ATP for retaining a Native American monitor.

4.4.3.4.5 Survey Results

Results of three cultural resource surveys of the areas within the CTA that had been previously surveyed for other LAX projects identified no resources within the Project area. A pedestrian survey of the Project area outside of the CTA also yielded negative results.

4.4.4 THRESHOLDS OF SIGNIFICANCE

A significant impact on historical and archaeological 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.
- 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.
- Disturbance of any human remains, including those interred outside of formal or dedicated cemeteries.

These thresholds are derived from Appendix G of the State CEQA Guidelines.

4.4.5 IMPACT ANALYSIS

4.4.5.1 Historic Resources

4.4.5.1.1 LAX Landside Access Modernization Program Project

Impacts Within the CTA

<u>Theme Building</u>

The elevated APM guideway would approach the Theme Building from the east along Center Way, the central axis between the Theme Building and the former ATCT, and would curve around the north side of the Theme Building before continuing west toward TBIT. The APM guideway in this area would be approximately 70 feet above ground. In accordance with the LAX Design Guidelines, the column support span for the portion of the APM guideway within proximity to the Theme Building would have a distance of approximately 120 feet. A proposed new elevated passenger walkway, connecting the APM to Terminals 2 and 6, would angle around the west side of the Theme Building just below the level of the guideway.

Neither the APM guideway nor the passenger walkway would physically touch or physically alter the Theme Building. The APM guideway would be separated by approximately 75 feet at its closest point from the Theme Building. The passenger walkway would maintain approximately 20 feet of distance from the western leg of the Theme Building's parabolic arch oriented east-west (see **Figure 4.4-5**).

"Substantial adverse change" as defined by Section 15064.5(b)(1) of the State CEQA Guidelines includes "alteration of the resource *or its immediate surroundings* such that the significance of an historical resource would be materially impaired" (emphasis added). The proposed guideway and walkway would alter the immediate surroundings of the Theme Building, by constructing new structures to the immediate north and west. Section 15064.5(b)(2)(A) of the State CEQA Guidelines go on to clarify that "[t]he significance of an historical resource is materially impaired when a project…materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance…"

The Theme Building is historically significant for its unique architectural design distinguished by two intersecting parabolic arches supporting an observation deck with a cantilevered, circular restaurant space below. Originally conceived as the visual centerpiece of the CTA and designed to be viewed from all sides, the Theme Building was visible from any location within the CTA at the time of its construction and provided commanding views of the Airport from its observation deck and restaurant space. Today, the apex of the two arches, the restaurant space and observation deck continue to rise above the parking structures, elevated roadway and terminal buildings that have been added to the CTA since its original construction.

The proposed APM guideway and passenger walkway would occupy a substantial portion of the existing space surrounding the Theme Building. The APM guideway and walkway would obscure and fragment views of the Theme Building from the east, north, and west, including important views from the upper and lower levels of the north side of World Way after entering the CTA. Only portions of the Theme Building would be visible above and below the guideway and between the columns. Moreover, the superimposition of the horizontal and vertical elements of the guideway and its supporting concrete columns would obfuscate the expressive forms and composition of the Theme Building's parabolic arches, circular base, perforated screen wall, restaurant, and central circulation and utilities core.

The APM guideway and elevated passenger walkway would be constructed within 75 feet and 20 feet, respectively, of the Theme Building, and their heights would be approximately equal to the level of the Theme Building restaurant space. Views from the interior of the restaurant, which was designed with canted glass walls to provide a 360-degree panorama of the surrounding airport, would be obstructed. The view from the restaurant interior, and from the observation deck above, would be obstructed to the east, north, and west, leaving only the view south unimpeded.

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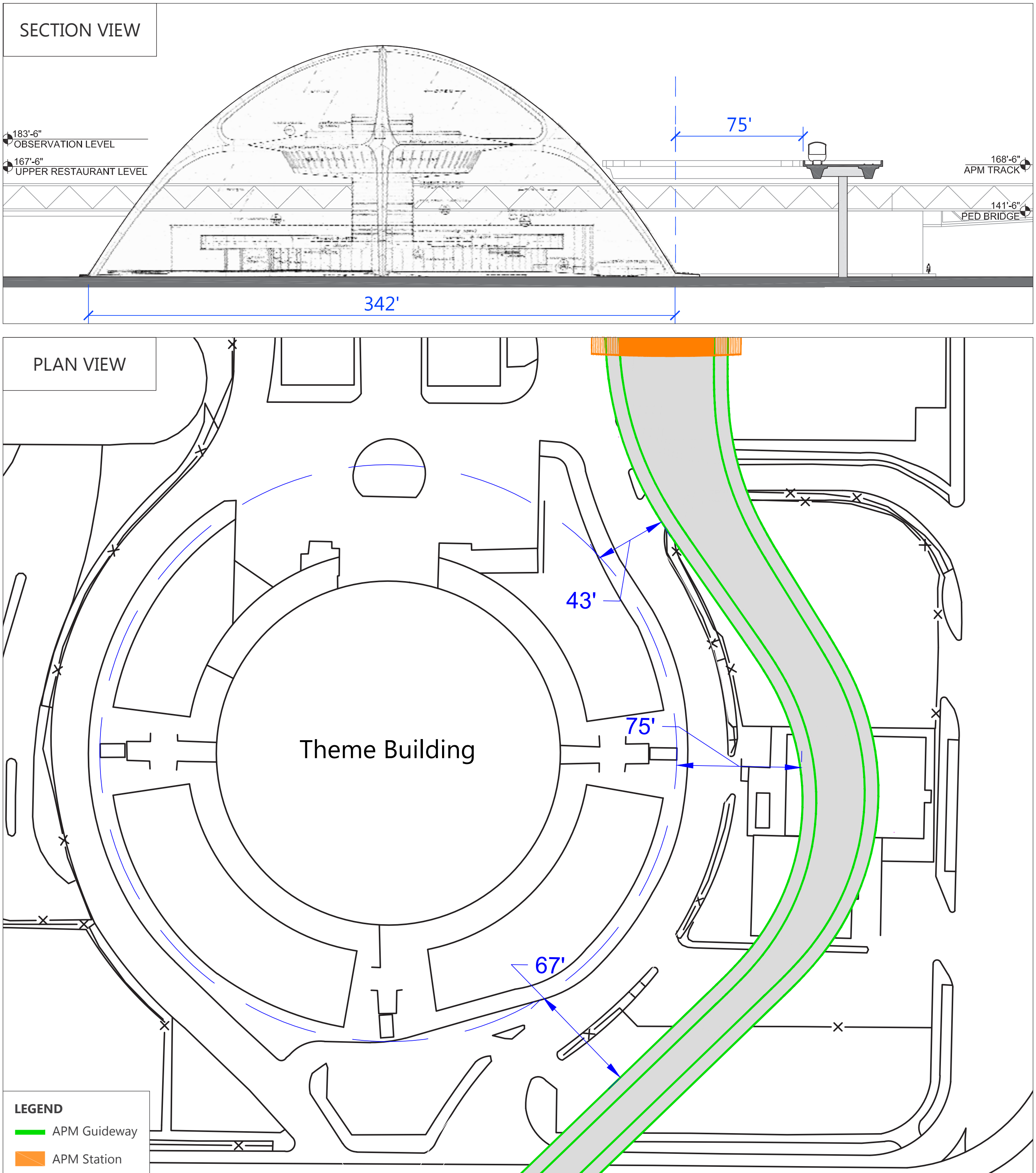

SOURCE: MapLAX, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.4-5

Proposed APM Guideway Adjacent to Theme Building

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Views of the Theme Building from within the CTA, and views of the surrounding Airport from the Theme Building's restaurant interior and observation deck, would be substantially altered by the location, dimensions, and design of the proposed APM guideway and passenger walkways. After construction of the APM guideway and elevated walkway, the expressive form and design of the Theme Building, which historically was viewable from all sides, would no longer be fully discernible when viewed from the east, north and west. Its original function providing views from its restaurant and observation deck would also be substantially reduced.

Because the Project would not result in physical alteration of the structure and materials of the Theme Building, it would remain eligible for listing in the National Register, California Register and as a LAHCM. While the physical materials and form of the Theme Building would remain intact, however, alteration of its surroundings by the Project would result in "material impairment" as defined by CEQA, because unique features of its architectural design as well as it original function would be substantially obscured, reducing its ability to convey its historic significance. For these reasons, the construction and operation of the APM guideway and the elevated walkway would result in a substantial adverse change to the Theme Building.

1961 Airport Traffic Control Tower (ATCT) and Administration Building

The elevated APM guideway would enter the CTA from the east just south of the 1961 ATCT. Construction of the APM guideway along this route would require demolition of the two-story Administration Building at the base of the 1961 ATCT. The Administration Building portion, which is structurally separate from the 1961 ATCT, has been substantially altered since its construction in 1961 and no longer retains sufficient integrity to convey historic significance (see Appendix H). Therefore, demolition of the two-story Administration Building portion would not result in a significant impact to a historical resource.

The 1961 ATCT has also been substantially altered but is still recognizable as a control tower and retains sufficient integrity to be eligible for local listing as an LAHCM. Construction of the APM guideway would not require demolition of the 1961 ATCT. The guideway would rise to a height of approximately 70 feet above ground, approximately half the height of the 13-story ATCT. The APM guideway would be located south of the 1961 ATCT and partially obscure the lower portions of the tower when viewed from the south. At its closest point, the APM guideway would be approximately 20 feet from the 1961 ATCT structure. Despite these encroachments, the 1961 ATCT would remain in its original location at the eastern entry to the CTA and retain its historic axial relationship with the Theme Building. The 1961 ATCT would be substantially taller than the APM guideway and remain a dominant visual feature of the CTA.

The 1961 ATCT retains its remaining original features including its square plan, 13-story height, and flat roof; control cab with angled, continuous, fixed aluminum-framed ribbon windows and surrounding roof deck; scored cement plaster spandrels; continuous aluminum grates; exposed concrete piloti, elevator/stair shaft; and screen wall at ground floor. Demolition of the two-story Administration Building portion and construction of the APM guideway has the potential to impact the 1961 ATCT and damage or destroy its original character-defining features, if the 1961 ATCT is not protected during construction due to its close proximity to the Administration Building. If the 1961 ATCT is not protected during construction, it would result in a significant impact because the proposed Project would cause a substantial adverse change in the significance of a "historical resource".

Terminal 6 Sign Tower

The APM guideway, and the center elevated walkway between Terminals 2 and 6, would not adversely affect the Terminal 6 Sign Tower. The APM guideway would be located along the center of the CTA at a substantial distance from the Terminal 6 Sign Tower. The elevated walkway would connect to Terminal 6 at a location west of the Terminal 6 Sign Tower. Since its original construction, the Terminal 6 Sign Tower has been partially contained within the second story of the Terminal 6 ticketing and baggage building. Moreover, construction of the CTA parking structures beginning in 1971 and construction of the second deck of World Way in 1984 have obscured the majority of views to the Terminal 6 Sign Tower from within the CTA. Therefore, any further obscuring of views to the Terminal 6 Sign Tower from locations within the CTA would not substantially change the existing condition. After construction of the APM guideway and the elevated walkway, the Terminal 6 Sign Tower would remain intact and in its original location. Impacts to the Terminal 6 Sign Tower would be less than significant because the proposed Project would not cause a substantial adverse change in the significance of the Terminal 6 Sign Tower.

Impacts Outside the CTA

APM Guideway

Outside the CTA, the APM guideway would generally align with the Century Boulevard approach east of Sepulveda Boulevard, then turn north from Century Boulevard midblock between Vicksburg Avenue and Avion Boulevard traversing an area currently used for surface parking. The APM guideway would continue north across W. 98th Street where it would traverse an area currently used as a surface parking lot and turn right at W. 96th Street and continue east along the W. 96th Street alignment. The APM guideway would continue east past Bellanca Boulevard, traversing parcels currently occupied by industrial uses, a former railroad right-of-way, and a natural gas station. The guideway would terminate at the CONRAC.

Only one property identified as a potential historic resource is located on or immediately adjacent to the APM guideway. This is the 1964 McCulloch Building at 6151 W. Century Boulevard. The APM guideway would approach the McCulloch Building from the south as it turns north from Century Boulevard to connect to the ITF West. The APM guideway, aligned north–south, would traverse east of the McCulloch Building on an area currently used for surface parking.

Construction of the APM guideway, which would be located approximately 100 feet from the McCulloch Building at its closest point, would not materially alter the McCulloch Building. The McCulloch Building would remain in its original location, and all of its character-defining architectural features would remain intact. The APM guideway would be constructed to the south and east of the McCulloch Building, partially obscuring views of the south and east facades. At 12 stories, however, the McCulloch Building would be more than twice the height of the APM guideway (which would be approximately 50 feet above grade at this location), and all of its public-facing facades would remain discernible despite partial blocking of views by the APM guideway. After construction of the APM guideway, the McCulloch Building would remain intact and continue to convey its historic significance. Impacts to the McCulloch Building, as a result of construction of the APM guideway, would be less than significant because the proposed Project would not cause a substantial adverse change in the significance of the McCulloch Building.

ITF West

Location of the ITF West is planned for the approximate location of today's City Bus Center at LAX Lot C, located on the north side of W. 96th Street between Airport Boulevard and Vicksburg Avenue. This area contains surface parking lots on both sides of W. 96th Street. A reconnaissance survey of the ITF West development area did not reveal any buildings, structures, objects, or sites that are eligible for listing as historic resources. No historic resources were identified immediately adjacent to or in the immediate vicinity of the ITF West development area.

Because no historic resources are located in or immediately adjacent to the ITF West development area, construction of the ITF West would not result in significant impacts to historic resources. Construction of the ITF West would not cause a substantial adverse change to any historical resources located on the ITF West site or in the vicinity, and impacts would be less than significant.

APM Maintenance and Storage Facility

The APM MSF would be constructed on existing LAX property located at the northeast corner of Airport Boulevard and W. 96th Street. Prior to LAX ownership, the property was the residential neighborhood of Belford Square, containing single-family homes and two-story multi-family residential buildings. Although the street pattern of the residential area remains, the parcels have largely been cleared of buildings and are mostly vacant lots. A reconnaissance survey of the APM MSF development area did not reveal any buildings, structures, objects, or sites that appear eligible for listing as historic resources. No historic resources were identified immediately adjacent to or in the immediate vicinity of the APM MSF development area.

Because no historic resources are located in or immediately adjacent to the APM MSF development area, construction of the APM MSF would not result in a substantial adverse change to historic resources. Impacts would be less than significant.

ITF East and CONRAC

The ITF East and CONRAC would be constructed on land bounded by W. Arbor Vitae Street to the north, W. Century Boulevard to the south, La Cienega Boulevard to the east, and Aviation Boulevard to the west. Construction of the ITF East and CONRAC would require the demolition of all remaining buildings and structures in the Manchester Square subdivision. A reconnaissance survey of the ITF East and CONRAC development areas did not reveal any buildings, structures, objects, or sites that appear eligible for listing as historic resources. No historic resources were identified immediately adjacent to or in the immediate vicinity of the ITF East and CONRAC development areas.

Because no historic resources are located in or immediately adjacent to the ITF East and CONRAC development area, construction of the ITF East and CONRAC would not result in a substantial adverse change to historic resources. Impacts would be less than significant.

Roadway Improvements and New Roadways

The proposed Project would include improvements to existing roadways and the construction of new roadways designed to improve access to the CTA from the freeway, and provide access to the proposed ITFs and CONRAC. The improvements to existing roadways would remain within the public right-of-way and would not cause a substantial adverse change to historical resources.

A new roadway would be constructed immediately to the south and east of the 1964 McCulloch Building at 6151 W. Century Boulevard. Construction of the new roadway would not materially alter the McCulloch Building. The McCulloch Building would remain in its original location, and all of its character-defining architectural features would remain intact. Impacts to the McCulloch Building, as a result of construction of the new roadway improvements, would be less than significant because the proposed Project would not cause a substantial adverse change in the significance of the McCulloch Building.

4.4.5.1.2 LAX Landside Access Modernization Program Potential Future Related Development

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development, as illustrated in Figure 2-51. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. A reconnaissance survey of the Project area did not reveal any buildings, structures, objects, or sites within areas of potential future development that appear eligible for listing as historical resources. Because no historic resources are located in or immediately adjacent to areas identified for potential future related development, this development would not result in significant impacts to historical resources because potential future related development would not cause a substantial adverse change in the significance of a "historical resource". Impacts to historical resources would be less than significant.

4.4.5.2 Archaeological Resources

4.4.5.2.1 LAX Landside Access Modernization Program Project

The cultural resource records search indicated that no previously recorded archaeological resources (including historic or prehistoric archaeological resources) are located within the Project area; however, 11 archaeological resources have been recorded within a half-mile radius. None of these resources would be impacted by the proposed Project (see Appendix I). Recent surveys performed in 2011 and 2013[57] and the survey by PCR in 2015 of the undeveloped portions of the Project area did not identify any new archaeological resources. Much of the Project area is developed with surface parking lots, buildings, streets, and/or dense vegetation (i.e., sod, landscaping) which obstructed the surveyor's view of the native ground surface.

The Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential development, and other on-going construction activities. Thus, surficial archaeological resources that may have existed at one time have likely been displaced

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57 Sapphos Environmental, Inc., *Proposed Runway 6L-24R and Runway 6R-24L Safety Area and Associated Improvements Project, Cultural Resources Technical Report,* January 23, 2014.

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 area, 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 historic resources or unique archeological resources. Thus, impacts to archaeological resources would be significant.

4.4.5.2.2 LAX Landside Access Modernization Program Potential Future Related Development

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development, as illustrated in Figure 2-51. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Recent surveys performed in 2011 and 2013[58] and the survey by PCR in 2015 of the undeveloped portions of the Project area did not identify any new archaeological resources. Much of the Project area is developed with surface parking lots, buildings, streets, and/or dense vegetation (i.e., sod, landscaping) which obstructed the surveyor's view of the native ground surface.

The Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential 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 potential future related development would include excavations of varying depths across portions of the Project area, including excavations at depths where native soils would be encountered, the potential future related development could impact previously unknown buried archaeological resources that fall within the definition of historic resources or unique archeological resources. Thus, impacts to archaeological resources would be significant.

4.4.5.3 Paleontological Resources

4.4.5.3.1 LAX Landside Access Modernization Program Project

The paleontological resources records search indicated that no previously recorded vertebrate fossil localities from the NHMLAC database are located within the Project area. As mentioned previously, the Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and

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58 Sapphos Environmental, Inc., *Proposed Runway 6L-24R and Runway 6R-24L Safety Area and Associated Improvements Project, Cultural Resources Technical Report,* January 23, 2014.

development, commercial and residential development, and other on-going construction activities that have likely displaced surficial paleontological resources. A pedestrian survey conducted in 2015 for the proposed Project did not identify any new paleontological resources or unique geologic features. While discovery of paleontological resources in artificial fill deposits within the Project area is unlikely, proposed excavations 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 area, 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.

4.4.5.3.2 LAX Landside Access Modernization Program Potential Future Related Development

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development, as illustrated in Figure 2-51. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. A pedestrian survey conducted in 2015 for the proposed Project did not identify any new paleontological resources or unique geologic features.

As mentioned previously, the Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential 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 that would occur below the fill levels could impact intact paleontological resources that have not been disturbed or displaced by previous development. Since the potential future related development could include excavations of varying depths across portions of the Project area, including excavations at depths where native soils would be encountered, the potential future related development could impact previously unknown buried unique paleontological resources. Thus, impacts to paleontological resources would be significant.

4.4.5.4 Human Remains

4.4.5.4.1 LAX Landside Access Modernization Program Project

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 and a pedestrian survey also did not indicate the presence of any known human remains within the Project area. As stated above, the Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential 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 across portions of the Project area, including excavations at depths where native soils would be encountered, the proposed Project has 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, 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.

4.4.5.4.2 LAX Landside Access Modernization Program Potential Future Related Development

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development, as illustrated in Figure 2-51. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Results of the cultural resource records search through the SCCIC and a pedestrian survey also did not encounter any known human remains within the Project area. As stated above, the Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential 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 potential future related development would include excavations of varying depths across portions of the Project area, including excavations at depths where native soils would be encountered, the potential future related development could impact previously unknown buried human remains. However, LAWA would comply with guidance as to the treatment of human remains that are accidentally 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. 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.

4.4.6 CUMULATIVE IMPACTS

The cumulative impacts analysis evaluates the impacts of the Project on historical resources in conjunction with past, present, and reasonably foreseeable probable future projects, including both LAX and non-LAX development projects, within the vicinity of LAX, 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 historical resources if the combined impacts would exceed the identified threshold of significance.

Of the historical resources identified within the vicinity of the Project (identified in Table 4.4-2), only Union Savings and Loan (9800 S. Sepulveda Boulevard) would be directly impacted by a cumulative project. Table 3-2 (project number 44) describes a future project that would change the use of this resource from an office building to a 178-guest room hotel with restaurant and spa. While this development project could physically impact the resource, the development project would be required to comply with all applicable existing regulations, procedures, and policies that address cultural resource impacts. Moreover, the proposed Project would not result in direct or indirect adverse impacts to the resource; the Project would involve roadway improvements on S. Sepulveda Boulevard west of this resource and W. 98th Street north of the resource. However, the improvements to these existing roadways would remain within the public right-of-way and would not directly or indirectly affect Union Savings and Loan at 9800 S. Sepulveda Boulevard. Therefore, cumulative impacts on this resource would be less than significant.

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 of the historical resources in the CTA (i.e., the Theme Building, the 1961 ATCT, and the Terminal 6 Sign Tower). Terminal improvement projects that have the potential to affect views of the Theme Building include the LAX Terminal 1.5 Project and the LAX Terminals 2 and 3 Modernization Project (projects 17 and 21 in Table 3-1), both of which propose new passenger processing buildings in the northern portion of the CTA, north of the Theme Building and across World Way. Evaluations of the potential impacts to historical resources from construction and operation of the LAX Terminal 1.5 Project and LAX Terminals 2 and 3 Modernization Project conducted by HRG in June 2016 determined that neither project would cause a substantial adverse change in the significance of a historical resource, including the Theme Building.[59] Nonetheless, because the proposed Project would have an indirect visual impact on the Theme Building, the combination of the LAX Terminal 1.5 Project and the LAX Terminals 2 and 3 Modernization Project would result in a significant cumulative impact on the Theme Building and the proposed Project's contribution to this impact would be cumulatively considerable.

The Project area is located within a highly urbanized area and has been subject to disturbance by Airport operations and development, commercial and residential development, and other on-going construction activities. Thus, surficial archaeological resources, paleontological 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, 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 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 potentially significant cumulative impacts on archaeological resources that are historical resources or unique archeological resources and unique paleontological resources and the proposed Project's contribution would be cumulatively considerable for these cultural resources categories. Through compliance with guidance as to the treatment of human remains that could be encountered during construction excavations, such as the procedures

[59] City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport, Terminal 1.5 Project*, *Initial Study – Proposed Mitigated Negative Declaration, Appendix B, Historic Resources Report*, July 2016, Available: http://www.lawa.org/ourLAX/CurrentProjects.aspx?id=13739; City of Los Angeles, Los Angeles World Airports, *Notice of Preparation and Initial Study, Los Angeles International Airport (LAX) Terminals 2 and 3 Modernization Project, Appendix A, Historic Resources Technical Report*, August 2016, Available: http://www.lawa.org/uploadedFiles/OurLAX/pdf/LAX_T2_3_Mod_Project_NOP-IS_Initial_Study_SECURE.pdf.

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.

4.4.7 MITIGATION MEASURES

As indicated in Section 4.4.5, impacts to cultural resources would be significant. The following mitigation measures are proposed to reduce significant impacts to cultural resources.

4.4.7.1 Historic Resources

The following mitigation measure is proposed to reduce significant impacts on the Theme Building.

- **LAX-HR (LAMP)-1. Preservation of Historic Resources: Theme Building and Setting.** Prior to the issuance of a building permit for the APM, a Historic Structures Report (HSR) shall be prepared for the Theme Building to guide its preservation and future use. The format and content of the report shall comply with the National Park Service's *Preservation Brief 43: The Preparation and Use of Historic Structure Reports*.

  The Theme Building shall be rehabilitated for a new use that maintains controlled public access to the building's atrium, lobby and former restaurant space. Potential new uses for the Theme Building include, but are not limited to, a restaurant, the relocated Flight Path Learning Center and Museum, or a meeting/event space.

  The Theme Building shall be rehabilitated in compliance with the Secretary of the Interior's Standards for Rehabilitation and the Guidelines for Rehabilitating Historic Buildings. The general specifications for the rehabilitation project shall include specifications for the treatment of character-defining features as identified in the HSR. The specifications shall include, but are not limited to, sections for the treatment of historic fabric; quality control; substitution procedures; selective demolition; cutting and patching; removal and storage of historic materials; protection and cleaning; repair options; and potential replacement of severely deteriorated features. Materials conservation plans shall be incorporated into the plans and specifications as necessary.

  The remaining space around the Theme Building, bounded on the north and south by World Way and on the east by East Way, shall preserve and retain the open setting to recall the Theme Building's historic setting. The open setting shall include an interpretive program that may include photographic exhibits, audio/visual presentations, and interactive displays to chronicle the history and design of the Theme Building and the 1961 ATCT, their context within the larger airport plan, the architects, and their historic significance. This exhibit shall be located in the setting surrounding the Theme Building or within the Theme Building and shall be made accessible to the public.

  The rehabilitation project team shall include a qualified historic architect who meets the Secretary of the Interior's Professional Qualifications Standards for historic architecture. The historic architect shall work with the project team to review project alternatives and the impacts of the proposed rehabilitation, and shall monitor construction for compliance with the recommendations in the HSR.

Mitigation Measure MM-A (LAMP)-1, Application of Design Features to Protect Aesthetic Context of Theme Building, discussed in Section 4.1.7, addresses visual impacts to the Theme Building.

The following mitigation measure is proposed to reduce significant impacts on the 1961 ATCT.

- **MM-HR (LAMP)-2. Protection of 1961 Airport Traffic Control Tower.** The 1961 ATCT would be preserved in place. Its remaining character-defining features would be preserved in accordance with the Secretary of the Interior's Standards for Rehabilitation. LAWA will protect the 1961 ATCT during demolition of the Administration Building to ensure the structural integrity of the ATCT. Additionally, the 1961 ATCT will be protected from construction equipment and activities during construction of the APM columns and guideway adjacent to the 1961 ATCT. Protection could include use of techniques to minimize vibration during construction, physical barriers to protect the structure, and contractor awareness of the historic resource.

4.4.7.2 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),[60] 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

60 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.

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 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.

4.4.7.3 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.

4.4.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

4.4.8.1 Historic Resources

With implementation of Mitigation Measure MM-HR (LAMP)-1, significant impacts to the Theme Building, as a result of the construction of the APM guideway and pedestrian walkway, would be reduced, but not to a level that would be less than significant. Because the Project would not result in physical alteration of the structure and materials of the Theme Building, it would remain eligible for listing in the National Register, California Register and as a LAHCM. While the physical materials and form of the Theme Building would remain intact, however, alteration of its surroundings by the Project would result in "material impairment" as defined by CEQA, because unique features of its architectural design as well as it original function would be substantially obscured, reducing its ability to convey its historic significance. There are no other feasible measures that could be adopted to reduce impacts to the Theme Building further while still achieving project objectives. For these reasons, the construction and operation of the APM guideway and the elevated walkway would result in a significant and unavoidable impact to the Theme Building.

Implementation of Mitigation Measure MM-HR (LAMP)-2 would protect the 1961 ATCT during demolition of the adjacent Administration Building and during construction of the APM guideway. Thus, potentially significant impacts related to the 1961 ATCT as a result of demolition of the Administration Building would be less than significant.

4.4.8.2 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 archeological 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.

4.4.8.3 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.

4.4.9 OTHER MEASURES

As indicated in Section 4.4.8, impacts to historic resources would remain significant even with the implementation of mitigation measures. LAWA recognizes that LAX contains unique historic resources and is committed to preserving its historic resources in a methodical and thoughtful manner. To that end, LAWA has developed a Preservation Plan for LAX resources that identifies all historic resources on LAX property, identifies historic resources that LAWA commits to preserving, provides guidance on the rehabilitation of historic buildings, structures, objects and sites located on LAX property, and creates a process for review of future projects with respect to historic resources. LAWA has committed to utilizing the LAX Preservation Plan (see **Appendix J**) to assist LAWA in preserving and evaluating its historic resources appropriately.

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4.5 Greenhouse Gas Emissions

4.5.1 INTRODUCTION

This greenhouse gas (GHG) analysis examines GHG and global climate change (GCC) impacts that would result from construction and operational activities 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 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 4.2, *Air Quality*, of this EIR. GHG emission calculations prepared for the proposed Project are provided in **Appendix F**, *Air Quality and Greenhouse Gas Emissions*, of this EIR.

4.5.1.1 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 CO_2 scenarios, could range from 1.5 to 4.8 degrees Celsius (C).[1] Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.

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).[2] 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.

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1 Intergovernmental Panel on Climate Change, *Climate Change 2014 – Mitigation of Climate Change, Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2014, p. 439.

2 California Climate Change Center, *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California, A Summary Report on the Third Assessment*, 2012, p. 2.

According to the 2012 Report from the California Climate Change, the following climate change effects are predicted in California over the course of the next century.[3]

- 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.
- 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.

4.5.1.2 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."[4] The global warming potential (GWP) is "a

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3 California Climate Change Center, *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California, A Summary Report on the Third Assessment*, 2012.

4 National Research Council of the National Academies, *Radiative Forcing of Climate Change: Expanding the Concept and Addressing Uncertainties*, 2005.

measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to carbon dioxide"[5] 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 4.5-1** identifies the GWP of several select GHGs.

Table 4.5-1: 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	12+3	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: Perfluoroethane (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.[6]
PREPARED BY: CDM Smith, May 2016.

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,[7] 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

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

6 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.

7 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.

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.

4.5.2 METHODOLOGY

The assumptions used to estimate GHG emissions from construction and operational sources are the same as those discusses in Section 4.2.1 *Air Quality*, Subsection 4.2.1.3 *Methodology*. The discussion below provides a description of methodology elements that are specific to analyzing GHG emissions.

GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective.[8] 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:[9]

> "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."

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8 California Air Pollution Control Officers Association, CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, January 2008, p. 35, Available: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf, accessed September 2, 2016.

9 California Natural Resources Agency, *Guidelines for Implementation of the California Environmental Quality Act*, Available: http://resources.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf, accessed May 2016.

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 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); 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); the Association of Environmental Professionals (AEP) *Community-wide GHG Emissions Protocol*; and the ACI ACA program propose generally consistent methodologies for preparing GHG inventories. 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.[10] For these reasons, CARB requires the calculation of direct and indirect GHG emissions as part of the AB 32 reporting requirements. Additionally, the California

[10] 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.

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."[11] Therefore, direct and indirect emissions have been calculated for the proposed Project and potential future related development.

This analysis considers only those GHG emissions resulting from the proposed Project, (with and without potential future related development) that would lead to a net change (increase or decrease) in incremental emissions compared to future conditions without the proposed Project. For disclosure, this analysis also provides the net change compared to existing conditions. The proposed Project would not change the number of airline passengers traveling to/through the Airport, or the number of aircraft operations. Therefore, this analysis does not include emissions from aircraft or associated emissions of auxiliary power units (APUs) or ground support equipment (GSE). Since potential impacts resulting from GHG emissions are long-term rather than acute, GHG emissions are calculated on an annual basis.

4.5.2.1 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.[12] The GRP is the guidance 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 study. 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). The analysis of construction-related GHG emissions focuses on direct emissions, such as those described below, given that indirect emissions associated with construction activities, such as related to purchased electricity, solid waste disposal, water usage, and wastewater disposal are negligible compared to the direct emissions.

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 and then added to annual operational emissions).[13]

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11 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.

12 The Climate Registry, *General Reporting Protocol*, Version 2.1, January 2016.

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

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

- Off-road construction equipment
- On-road equipment and delivery/haul trucks
- 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 4.2, *Air Quality* - Subsection 4.2.1.3, with supporting information presented in Appendix F, *Air Quality and Greenhouse Gas Emissions*, of this EIR. GHG construction emissions have been developed for both the proposed Project and for the potential future related development.

4.5.2.2 Operations

In accordance with the State CEQA Guidelines and the L.A. CEQA Thresholds Guide, the operational GHG impacts of the proposed Project were assessed based on the net new incremental increase in emissions to determine significance under CEQA. As previously mentioned, the proposed Project would not alter the airspace traffic, runway operational characteristics, or practical capacity of the Airport. As such, changes in emissions from aircraft operations over the 2015 existing conditions are due to increased travel demand and changes in aircraft fleet mixes that are projected to occur by 2024 and 2035 irrespective of the proposed Project. The analysis of operational emissions presented below includes direct vehicular emissions, as would be influenced by implementation of the proposed Project, and stationary sources, as well as indirect emissions from electrical demand associated with the implementation of the proposed Project.

Impacts were assessed for the following scenarios, described in detail in Sections 4.5.4.1.1 and 4.5.4.1.2 below: 2015 With Project compared to the 2015 existing conditions; the 2024 Future With Project compared to the 2024 Future Without Project scenario; the 2035 Future With Project compared to the 2035 Future Without Project; and the 2035 Future With Project and potential future related development compared to the 2035 Without Project. Additionally, the following scenarios were included, for informational/disclosure purposes only: the 2024 Future With Project compared to the 2015 Existing Conditions; the 2035 Future With Project compared to the 2015 Existing Conditions; and, the 2035 With Program (i.e., the proposed Project plus potential future related development) compared to the 2015 Existing Conditions.

4.5.2.2.1 Mobile Sources

GHG emissions from on-road vehicles were calculated using EMFAC2014 emission factors and the total daily vehicle miles traveled (VMT) to obtain emissions in metric tons of CO_2 equivalent ($MTCO_2e$) per year. The VMT estimates are summarized in Appendix F.

4.5.2.2.2 Stationary Sources

GHG emissions would also occur from stationary sources including fixed combustion equipment and incremental electricity demand. Changes in the size of facilities on the proposed Project site between the existing (2015) and Project year (2024) were used to estimate the change in GHG emissions that would occur from natural gas combustion, purchased electricity, wastewater treatment, water consumption, and solid waste disposal. Implementation of the proposed Project would include the removal of several existing nearby buildings in order to construct components of the Project. Section 2.5, *Enabling Projects*, provided the assumptions on facilities to be demolished, relocated, and/or reconstructed. As such, the 2015 baseline and 2024 Without Project scenarios only quantify the GHG emissions from these facilities.

The 2024 With Project scenario quantifies the emissions from the operations of the completed Project components as described in Section 2.6.1.1. The 2035 With Project scenario quantifies the emissions from the operations of the completed Project components as described in Section 2.6.1.2.

Emissions from potential future related development were also estimated for 2035. Direct and indirect building emissions were estimated based on facility square footages using the California Emissions Estimator Model (CalEEMod), Version 2013.2.2. CalEEMod estimates the increase in greenhouse gas emissions that would occur from natural gas combustion, purchased electricity, water delivery, wastewater treatment, and solid waste disposal (see Appendix F). Emissions are given in units of $MTCO_2e$ per year.

In the 2015 Power Integrated Resource Plan, the Los Angeles Department of Water and Power (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. Based on the details provided in 2015 Integrated Resource Plan, emission rates were estimated for GHGs to be 825 pounds per megawatt-hour (lbs/MWh) and 546 lbs/MWh for the years 2024 and 2035, respectively.

4.5.3 EXISTING CONDITIONS

4.5.3.1 Regulatory Setting

4.5.3.1.1 International and Federal Regulations and Directives

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. [14]

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.[15]

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.[16]

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.[17]

Endangerment Finding

The USEPA subsequently published its endangerment finding for GHGs in the Federal Register,[18] 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

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

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

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

[17] 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.

[18] 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.

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 greenhouse gases (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.[19]

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 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.[20]

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.[21]

4.5.3.1.2 State Regulations and Directives

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

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19 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.

20 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.

21 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.

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.[22]

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 greenhouse gas 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.

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.[23] 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.

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22 California Senate Bill 97, August 24, 2007.

23 2016 Energy Standards were made in June 2015 and will go into effect on January 1, 2017.

Green Building Standards

The 2013 California Green Building Standards Code (24 CCR Part 11, CalGREEN) took effect January 1, 2014. The Green Building Standards will 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.[24] 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.

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24 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.

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 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.[25]

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.

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.[26]

At the time of Draft EIR preparation, CARB was preparing an update to the Scoping Plan to reflect the Executive Order B-30-15 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 the 2015/2016 legislative session and, at the time of this writing, is awaiting signature by the Governor. SB 32 requires the ARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse

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25 California Executive Order S-3-05, June 1, 2005.

26 California Assembly Bill 32, September 27, 2006.

gas emissions to ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the 1990 statewide greenhouse gas emissions limit no later than December 31, 2030.

California Senate Bill 375 (SB 375)

SB 375 requires CARB to set regional targets for 2020 and 2035 to reduce GHG emissions from passenger vehicles. A regional target will be developed for each of the 18 metropolitan planning organizations (MPOs) in the State; the Southern California Association of Governments (SCAG) is the MPO that has jurisdiction over the LAX area. A Regional Targets Advisory Committee (RTAC) was appointed by CARB to provide recommendation to be considered and methodologies to be used in CARB's target setting process. The final RTAC report was released on January 23, 2009.

Each MPO is required to develop Sustainable Community Strategies through integrated land use and transportation planning and to demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. 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 adopted the Regional Transportation Plan/Sustainable Community Strategies for the six-country Southern California region on April 4, 2012.[27]

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.[28]

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.

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27 California Senate Bill 375, September 30, 2008.

28 17 California Code of Regulations, Section 95480 et seq., "Low Carbon Fuel Standard."

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.[29] SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

4.5.3.1.3 Regional Regulations and Directives

California Air Pollution Control Officers Association (CAPCOA) Guidance

CAPCOA published a white paper to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation of mitigation of GHG emissions from proposed projects and identifying significance thresholds options. The white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures, and provides air districts and lead agencies with options for incorporating climate change into their programs.[30]

SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

Subsection 4.8.3.1 within Section 4.8, *Land Use and Planning*, provides a detailed description of the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The following provides a summary of that description. The SCAG 2016-2040 RTP/SCS is a federal and state mandated transportation plan that envisions the future multi-modal transportation system for the region; it provides the basic framework for coordinated, long-term investment in the regional transportation system over a 20-year planning horizon, and is required to be updated every four years. The 2016-2040 RTP/SCS includes the following goals:

(1) align plan investments and policies with improving regional economic development and competitiveness;

(2) maximize mobility and accessibility for all people and goods in the region;

(3) ensure travel safety and reliability for all people and goods in the region;

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29 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.

30 California Air Pollution Control Officers Association, *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*, January 2008, Available: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf, accessed September 2, 2016.

(4) preserve and ensure a sustainable regional transportation system;

(5) maximize the productivity of the transportation system;

(6) protect the environment and health of residents by improving air quality and encouraging active transportation (nonmotorized transportation, such as bicycling and walking);

(7) actively encourage and create incentives for energy efficiency, where possible;

(8) encourage land use and growth patterns that facilitate transit and nonmotorized transportation; and

(9) maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.

The RTP/SCS identifies a Project List of individual transportation projects aimed at improving the region's mobility and air quality, which would also reduce GHG emissions, and the list includes transportation improvements specific to LAX. The listed components are the APM, Intermodal Transportation Facilities (ITFs), CONRAC, CTA improvements, and connection with the Metro Crenshaw line currently under construction.

SCAQMD Guidance

The South Coast Air Quality Management District (SCAQMD) has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.[31]

Los Angeles Department of Water & Power Plan

The Los Angeles Department of Water & 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 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

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31 South Coast Air Quality Management District, "Greenhouse Gases (GHG) CEQA Significance Thresholds," Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/page/2, accessed November 19, 2015.

plan will result in substantial decreases in regional GHG emissions associated with regional electrical power demand.

4.5.3.1.4 Local Regulations and Directives

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).[32] 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 the U/S/ Green Building Council's Leadership in Energy and Environmental Design (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.[33]

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).[34] 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. Specifically, actions relative to ground vehicles that are relevant to the proposed Project include, establishing a rideshare program for employees and use of mass transit program for all airport personnel, promoting a bicycle program and adding bicycle lanes access to the airport, and establishing a hotel shuttle consolidation program. Additionally, other measures for off-airport traffic, as related to LAX include: construct additional CNG stations at airports; and rental car shuttle alternative fuel vehicle fleet requirements.

Executive Directive No. 10

As part of the City's efforts to reduce greenhouse gas 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

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

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

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

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.[35] 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 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. Included in pLAn is a chapter regarding mobility and transit, as would be related to the proposed Project. 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 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 greenhouse gas 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.

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

LAWA Sustainability Plan

LAWA's Sustainability Plan,[36] 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.[37] 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 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.[38]

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

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[36] City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports Sustainability Plan*, April 2008.

[37] 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.

[38] 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.

and/or location of work, LAWA may require more prescriptive approaches to resolving issues such as energy performance, site drainage, etc.

The LAX Design Guidelines include Section 4, Sustainability, which set forth sustainability objectives and guidelines related to: planning and design; energy efficiency and renewable energy; water efficiency and conservation; material conservation and resource efficiency; and environmental quality (see Appendix B).

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.[39] Additionally, LAWA is in the certification process for the Airport Council International (ACI) Airport Carbon Accreditation (ACA) program. 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 Scope 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*).

4.5.3.2 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.[40]

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

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

[40] 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.

and approximately 405 $MMTCO_2e$ *excluding* emissions related to imported power.[41] **Table 4.5-2** 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.[42]

Table 4.5-2: 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: Ricondo & Associates, Inc., August 2016.

41 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.

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

Between 1990 and 2010, the population of California grew by approximately 7.5 million (29.8 to 37.3 million).[43] 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).[44] 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.[45]

The baseline operational emissions (2015) for airport sources, including those from on-airport and off-airport roadways, are shown in **Table 4.5-3**. The traffic emissions are for airport-related trips on the roadway network.

Table 4.5-3: 2015 Existing Airport Operational GHG Emissions

	ANNUAL EMISSIONS (METRIC TONS CO_2e[1/] PER YEAR)			
EMISSION SOURCE	**CO_2**	**CH_4**	**N_2O**	**TOTAL (CO_2e)[2/]**
Autos	322,478	3,356	4,402	330,236
Trucks	47,342	150	231	47,722
Parking	22,948	239	313	23,500
Indirect Electrical Demand	26,843	279	366	27,488
Total[2/]	419,611	4,024	5,312	428,946

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/ Totals may not add exactly because of rounding.

SOURCE: Appendix F of this EIR.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

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43 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.

44 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.

45 California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks 1990 to 2004*, December 2006.

4.5.4 THRESHOLDS OF SIGNIFICANCE

For purposes of this 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, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

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. Rather, CEQA leaves the determination of significance 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. As discussed previously, neither the State of California, SCAQMD or the City of Los Angeles has yet established project-level specific quantitative significance thresholds for GHG emissions.

In identifying a quantitative basis by which to evaluate the proposed Project's impacts in light of the first GHG thresholds of significance presented above, (i.e., generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment), the following criteria are applied:

- <u>Proposed Project Improvements:</u> As a transportation-related project pertaining to travel to and from LAX, would the change in travel characteristics associated with the project result in an increase in GHG emissions? If so, the impact is considered significant. This transportation-related threshold is referred to as "No Net Increase" in this EIR.
- <u>Potential Future Related Development:</u> As a mixed-use development project, would the potential future related development result in GHG emissions that exceed the efficiency thresholds recommended by the SCAQMD? The SCAQMD has suggested a 2020 target date efficiency threshold value of 4.8 MTCO2e per year per service population for projects and 2035 target date efficiency threshold value of 3.0 MTCO2e per year per service population for projects, as presented by the Stakeholder Working Group in September 2010.[46] With anticipated buildout of potential future related development by 2035, a significant impact is considered to occur if the GHG emissions exceed 3.0 MTCO2e per year per employee.

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46 South Coast Air Quality Management District, *Minutes for the Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group #15*, September 28, 2010, Available: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds, accessed August 2016.

4.5.4.1.1 Scenarios Used to Determine Significance for the Proposed Project Emissions

Total construction-related emissions attributable to the proposed Project were estimated as described above and amortized over a 30-year period for comparison to the emissions threshold.

For operational-related emission increments, the following scenarios were evaluated:

- 2015 With Project to 2015 Existing Conditions: A comparison of 2015 With Project to 2015 Existing Conditions is provided. The level of significance of Project-related emissions is determined for this scenario.
- 2024 Future With Project to 2024 Future Without Project: Emissions associated with the proposed Project that would occur in 2024 upon completion of Phase 1 of the proposed transportation system improvements are compared to the “future without project” emissions in 2024. The level of significance of Project-related emissions is determined for this scenario.
- 2035 Future With Project to 2035 Future Without Project: Emissions from the proposed Project that would occur in 2035 upon completion of Phase 2 of the proposed transportation system improvements are compared to the “future without project” emissions in 2035. The level of significance of Project-related emissions is determined for this scenario.

In addition, the following comparisons were made for disclosure purposes only:

- 2024 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of “future with proposed Project (2024)” to 2015 existing conditions is provided. The resulting incremental emissions are compared to the GHG threshold of significance; however, the level of significance of Project-related emissions is not determined for this scenario because it includes future emissions not attributable to the proposed Project.
- 2035 Future With Project to 2015 existing conditions: For disclosure purposes, a comparison of “future with proposed Project (2035)” to 2015 existing conditions is provided. The resulting incremental emissions are compared to the GHG threshold of significance; however, the level of significance of Project-related emissions is not determined for this scenario because it includes future emissions not attributable to the proposed Project.

Vehicle mode splits and traffic assumptions associated with future conditions with and without construction of the proposed Project are identified in Section 4.12.1, *On-Airport Transportation*.

4.5.4.1.2 Scenarios Used to Determine Significance for Potential Future Related Development Emissions

For construction-related increments associated with the potential future related development, a baseline of zero emissions is used and the construction-related emissions, as amortized over a 30-year period are added to the Project’s operations-related annual emissions to assess whether the total (construction and operations) emissions exceed the applicable threshold of significance. For operational-related emission increments, the following comparison was made:

- 2035 Future With Program (i.e., the proposed Project plus potential future related development) to 2035 Future Without Program: Emissions with the proposed Program, including the proposed Project and potential future related development, that would occur in 2035, are compared to the "future without project" emissions in 2035. The level of significance of emissions from potential future related development is determined for this scenario.

In addition, for disclosure purposes, emissions under the 2035 Future With Program scenario including potential future related development that would occur by 2035, are compared to 2015 existing conditions. The resulting incremental emissions are compared to GHG threshold of significance; however, the level of significance of Project-related emissions is not determined for this scenario, because it includes future emissions not attributable to the proposed Program.

Vehicle mode splits and traffic assumptions associated with future conditions with and without construction of the proposed Project are identified in Section 4.12.1, *On-Airport Transportation*.

4.5.5 IMPACT ANALYSIS

The analysis below addresses whether implementation of the proposed Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Also provided in the impacts analysis below is an evaluation of whether the proposed Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

4.5.5.1 LAX Landside Access Modernization Program Project

4.5.5.1.1 Construction Emissions

Annual GHG emissions for construction of the proposed Project are presented in **Table 4.5-4**, which, as indicated in the table, would total 59,889 $MTCO_2e$. As noted in Section 4.5.2.1, 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 1,997 $MTCO_2e$ per year. These amortized construction emissions are added to the operational emissions in 2015, 2024, and 2035, and the final results compared to the No Net Increase emissions threshold for transportation-related projects.

Table 4.5-4: Construction Greenhouse Gas Emissions for the Proposed Project without Mitigation

	CONSTRUCTION GHG EMISSIONS, MT CO_{2E}/YEAR														
	CONSTRUCTION YEAR														
EMISSION SOURCE	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**TOTAL**
Off-Road, On-Site Equipment	204	3,783	7,123	6,436	3,719	2,059	1,891	564	137	18	143	0	0	0	26,077
On-Road, On-Site Trucks	34	1,787	3,794	4,322	2,515	1,198	503	156	20	12	44	0	0	0	14,384
On-Road, Off-Site Workers	22	2,322	2,983	2,260	2,052	970	999	410	7	5	20	0	0	0	12,052
On-Road, Off-Site Deliveries	9	466	1,361	1,928	1,359	1,144	715	326	0	6	61	0	0	0	7,376
All Sources (Metric Tons):	270	8,358	15,260	14,946	9,645	5,371	4,108	1,456	164	41	269	0	0	0	**59,889**

SOURCE: Appendix F of this EIR
PREPARED BY: CDM Smith, September 2016..

4.5.5.1.2 Operational Emissions

2015 With Project Compared to 2015 Existing Conditions

A comparison of emissions from the 2015 With Project scenario to 2015 existing conditions is shown in **Table 4.5-5**. As shown, the incremental emissions between the 2015 existing conditions and the implementation of the 2015 With Project scenario are a net increase in CO_2e. Therefore, GHG emissions resulting from the 2015 Project construction and operations would have been a significant impact on climate change over the 2015 existing conditions, if the project had, hypothetically, been completed in 2015.

Table 4.5-5: Emissions - 2015 With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 BASELINE (METRIC TONS CO_2e)	2015 WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos [1/]	2,511,630	2,501,574	-10,055
Trucks [1/]	531,631	519,234	-12,397
Parking	23,500	22,727	-773
Proposed Project Construction (Amortized)	--	1,997	1,997
Other Project Emissions	27,488 [2/]	48,925 [3/]	21,437
Total Net	**3,094,249**	**3,094,457**	**209**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**Yes**

NOTES:

1/ Auto and truck GHG emissions for the 2015 With Project scenario are based on total traffic volumes on the roadway network, not just airport-related trip volumes, because airport-related trip volumes for this scenario were not available. The 2015 existing conditions traffic volumes in this table are also based on total volumes, not just airport-related trips, to provide an appropriate comparison to the 2015 With Project scenario.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the electrical demand power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

2024 Future With Project Emissions Compared to 2024 Future Without Project

A comparison of emissions from the 2024 Future With Project scenario and the 2024 Future Without Project scenario is shown in **Table 4.5-6**. As shown, the incremental emissions between the 2024 Future Without Project scenario and the implementation of the 2024 Future With Project scenario are a net decrease in CO_2e. Therefore, under future 2024 conditions, GHG emissions resulting from the implementation of the proposed Project would not result in a significant impact on climate change.

Table 4.5-6: Emissions - 2024 Future With Project Compared to 2024 Future Without Project

EMISSION SOURCE	2024 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2024 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	364,405	335,624	-28,781
Trucks	37,086	37,234	147
Parking	23,167	22,477	-690
Proposed Project Construction (Amortized)	--	1,997	1,997
Project Energy Demand [1/]	18,487 [2/]	33,450 [3/]	14,963
Total Net	**443,145**	**430,782**	**-12,364**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

2024 Future With Project Emissions Compared to 2015 Existing Conditions

For informational purposes, a comparison of emissions from the 2024 Future With Project scenario and the 2015 Existing Conditions is shown in **Table 4.5-7**. As shown, the incremental emissions between the 2015 Existing Conditions and the implementation of the 2024 Future With Project scenario are a net increase in CO_2e. Therefore, when compared with existing conditions, GHG emissions resulting from the implementation of the proposed Project would result in a significant impact on climate change.

[Draft]

Table 4.5-7: Emissions - 2024 Future With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2024 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	335,624	5,388
Trucks	47,722	37,234	-10,488
Parking	23,500	22,477	-1,023
Proposed Project Construction (Amortized)	--	1,997	1997
Project Energy Demand [1/]	27,488 [2/]	33,450 [3/]	5,962
Total Net	**428,946**	**430,782**	**1,836**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**Yes**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

2035 Future With Project Compared to 2035 Future Without Project

A comparison of emissions from the 2035 Future With Project scenario and the 2035 Future Without Project scenario is shown in **Table 4.5-8**. As shown, the incremental emissions between the 2035 Future Without Project scenario and the implementation of the 2035 Future With Project scenario are a net decrease in CO_2e. Therefore, under future 2035 conditions, GHG emissions resulting from the implementation of the proposed Project (excluding the construction and operation of potential future related development) would not result in a significant impact on climate change.

Table 4.5-8: Emissions - 2035 Future With Project Compared to 2035 Future Without Project

EMISSION SOURCE	2035 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	316,229	266,687	-49,542
Trucks	46,060	49,209	3,149
Parking	21,111	20,667	-444
Proposed Project Construction (Amortized)	--	1,997	1,997
Project Energy Demand [1/]	12,254 [2/]	22,734 [3/]	10,480
Total Net	**395,654**	**36,1294**	**-34,360**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

2035 Future With Project Compared to 2015 Existing Conditions

For informational purposes, a comparison of emissions from the 2035 Future With Project scenario and the 2015 Existing Conditions is shown in **Table 4.5-9**. As shown, the incremental emissions between the 2015 Baseline and the implementation of the 2035 Future With Project scenario are a net decrease in CO_2e. Therefore, when compared with existing conditions, GHG emissions resulting from the implementation of the proposed Project (excluding the construction and operation of potential future related development) would not result in a significant impact on climate change.

Table 4.5-9: Emissions - 2035 Future With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	266,687	-63,549
Trucks	47,722	49,209	1,487
Parking	23,500	20,667	-2,833
Proposed Project Construction (Amortized)	--	1,997	1997
Project Energy Demand [1/]	27,488 [2/]	22,734 [3/]	-4,754
Total Net	**428,946**	**361,294**	**-67,652**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

4.5.5.1.3 Consistency with Greenhouse Gas Reduction Plans

AB 32

As described in Section 4.5.3.1.2, the AB 32 Climate Change Scoping Plan approved by CARB in 2008 and reapproved in 2011 outlined the state's strategy to achieve the 2020 GHG emissions limit target, and the First Update to the Scoping Plan, approved by CARB in 2014, evaluates progress to date and provides recommendations and additional strategies to continue progress towards achieving GHG emissions reductions in the future. The focus areas within the Scoping Plan update include energy, transportation, agriculture, water, waste management, and natural and working lands. With respect to transportation, the Scoping Plan Update indicates that achieving California's long-term criteria pollutant and GHG emissions goals will require four strategies to be employed: (1) improve vehicle efficiency and develop zero emission technologies, (2) reduce the carbon content of fuels and provide market support to get these lower-carbon fuels into the marketplace, (3) plan and build communities to reduce vehicular GHG emissions and provide more transportation options, and (4) improve the efficiency and throughput of existing transportation systems.

The first strategy for reducing transportation-related GHG emissions (i.e., improve vehicle efficiency and develop zero emission technologies) pertains primarily to ARB working with the USEPA and other agencies to further the implementation of reduced emission engine standards, including heavy duty (truck) engines), and ZEV requirements for sales of new vehicles in California. Implementation of the proposed Project would not conflict with that strategy and, in fact, includes elements that complement the intent of that strategy including: a zero emission APM[47] that will replace petroleum-fueled vehicle trips in the vicinity of the CTA; a connection between the Airport APM system and the Metro light-rail system, which also features a zero emission (electrically propelled) transit system; and, electric vehicle charging stations within the proposed ITFs. With regard to the second strategy (i.e., reduce the carbon content of fuels and provide market support to get these lower-carbon fuels into the marketplace), that strategy is beyond the scope of the proposed Project. Relative to the third strategy (i.e., plan and build communities to reduce vehicular GHG emissions and provide more transportation options), the proposed Project does not involve the planning or development of a new community; however, the Scoping Plan Update recognizes the role of Sustainable Communities Strategies that are developed in conjunction with federally-required Regional Transportation Plans as a means of reducing GHG emissions. Please see discussion below regarding the proposed Project's relationship to the SCAG 2016-2040 RTP/SCS. With regard to the fourth strategy (i.e., improve the efficiency and throughput of existing transportation systems), the very essence of the proposed Project is to improve the efficiency of the ground access system at LAX, both locally, relative to the CTA and immediate vicinity, as well as regionally with the project's relationship to the future Airport Metro Connector station, including connection to the Metro light rail transit system.

The GHG reduction target reflected in AB 32 calls for a statewide reduction in GHG emissions to 1990 levels by 2020. GHG emissions for LAX in 1990 have been estimated as part of a GHG inventory prepared for each airport operated by LAWA, including transportation-related emissions. The basis for estimating the transportation-related GHG emissions for LAX in 1990 are, however, different from those assumed in estimating the GHG emissions associated with the proposed Project. While the 1990 GHG transportation-related emissions for LAX assumed the full distance of vehicle trips to and from the Airport, the proposed Project GHG analysis focused on trips occurring near LAX (i.e., within approximately six miles of LAX) as would be directly affected by the proposed Project improvements. Given the differences in key assumptions, a comparison of the Project-related GHG emissions estimated for 2024 and 2035 to the emissions in the 1990 LAX greenhouse gas inventory would not provide an appropriate basis for evaluating how the GHG emissions of the Project measure against the GHG reduction targets of AB 32. It is anticipated, however, that the GHG emissions estimated for the proposed Project in 2024 and 2035 would exceed the GHG reduction targets in AB 32 due to the respective increases in passenger activity levels at LAX compared to 1990 levels.

LAX had a passenger activity level of approximately 45.8 MAP in 1990, which is estimated to increase to approximately 86 MAP by 2024 and approximately 96 MAP by 2035 (see Section 4.12.2.2.5), which are increases over 1990 levels of 88 percent and 110 percent, respectively. In "back-calculating" the Project-related GHG emissions for a hypothetical 1990 baseline scenario, by reducing the 2024 and 2035 GHG

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[47] It is acknowledged that the operation of the APM would have indirect GHG emissions associated with electricity consumption; however, such indirect GHG emissions associated with electricity consumption is also inherent in the operation of ZEVs, which it the focus of this strategy.

emissions in proportion to the 1990 MAP level[48] and using EMFAC emission factors specific to 1990, the Project-related GHG emissions in 2024 would be approximately 43 percent greater than the comparable emissions in 1990 and the Project-related GHG emissions in 2035 would be approximately 48 percent greater than the 1990 GHG emissions. It is important to note that the future GHG emissions, being higher than 1990 emissions, are driven by increased passenger activity levels that are beyond the scope of the proposed Project and such future GHG emissions would be less with implementation of the proposed Project improvements than would otherwise occur without the proposed Project, as indicated above in Tables 4.5-6 and 4.5-7. Notwithstanding, the proposed Project's numerical exceedances of the State GHG reduction target set forth in AB 32 is considered, for the purposes of this EIR, to be inconsistent with the State's ability to achieve the AB 32 target and is therefore a significant impact.

SB 375 and SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

As described in Section 4.5.3.1.2, SB 375 requires CARB to set regional targets for 2020 and 2035 to reduce GHG emissions from passenger vehicles and also requires each MPO to develop Sustainable Community Strategies through integrated land use and transportation planning, which includes strategies to demonstrate an ability to attain the proposed reduction targets. CARB issued an 8 percent per capita reduction target for the SCAG region for 2020 and a target of 13 percent per capita reduction by 2035, and SCAG adopted the 2016-2040 RTP/SCS that includes a finding that the plan complies with the emissions reduction targets established by CARB and meets the requirements of SB 375. The 2016-2040 RTP/SCS includes an appendix specific to aviation and airport ground access, with the assumptions and improvements identified therein accounted for in the plan and strategy for achieving GHG emissions reduction targets. The key elements of the proposed Project are specifically identified in Table 6 of that appendix and include the CONRAC, the ITFs, and the APM, as well as other related improvements such as the New Light Rail Station & Consolidated Bus facilities (i.e., the Metro Connector Station), the Crenshaw/LAX Transit Corridor Project , ITS and intersection improvements in and near LAX Airport, projects within and near LAX to eliminate traffic bottlenecks, and Crenshaw/LAX accommodations near 96th Street/Aviation Boulevard. As such, implementation of the proposed Project would not conflict with SB 375 or with the SCAG 2016-2040 RTP/SCS.

Executive Order S-3-05

As described in Section 4.5.3.1.2, EO S-3-05 sets the following GHG reduction targets: to reduce statewide GHG emissions by 2020 to 1990 levels and reduce statewide GHG emissions by 2050 to 80 percent of 1990 levels. The GHG reduction targets specified in EO S-3-05 can be considered as a basis for evaluating how the GHG emissions of a project compare to those targets. As noted above in the discussion of AB 32, the GHG emissions associated with operations of the proposed Project in the future (2024 and 2035) would not be less than the levels estimated for 1990 conditions, notwithstanding that future GHG emissions would be less with implementation of the proposed Project than without the proposed Project. The proposed Project's numerical

48 While VMT and associated GHG emissions are not strictly a function of overall MAP, but rather are driven by the origin and destination (O&D) component of MAP, the O&D portion of the 1990 MAP and the projected 2024 MAP and 2030 MAP averages around 70% (+/-3%); therefore, for the purposes of estimating a 1990 baseline scenario, the ratio of 1990 GHG emissions to 2024 and 2035 GHG emissions is based on overall MAP.

exceedances of the GHG reduction targets set forth in EO S-03-05 is considered, for the purposes of this EIR, to be inconsistent with the State's ability to achieve the subject Executive Order 2020 and 2050 targets, and is therefore a significant impact.

Executive Order B-30-15 and SB 32

As described in Section 4.5.3.1.2, California Governor Edmund G. Brown issued Executive Order B-30-15 to reduce California GHG emissions to 40 percent below 1990 levels by 2030. That GHG reduction target is also reflected in SB 32. As more fully described above, the proposed Project GHG emissions would not be below 1990 levels; hence, the Project's numerical exceedances of the GHG reduction target set forth in EO S-03-05 and SB 32 is considered, for the purposes of this EIR, to be inconsistent with the State's ability to achieve the subject Executive Order and Senate Bill targets, and is therefore a significant impact.

Green LA

As described in Section 4.5.3.1.4, Green LA presents a framework targeted to reduce the City's GHG emissions by 35 percent below 1990 levels by 2030, and identifies objectives and actions in various focus areas, including airports. While none of those objectives and actions are specific to the proposed Project, the essence of the proposed Project, to reduce traffic congestion around the airport, reduce VMT, and reduce GHG emissions, is consistent with, and complementary to, the basic purpose of the Green LA plan. Notwithstanding, the GHG emissions associated with operations of the proposed Project in the future would exceed the City's climate change goal reflected in Green LA; that goal being to reduce the city's GHG emissions 35 percent below 1990 levels by 2030 – see discussion above relative to AB 32 for additional explanation. The proposed Project's numerical exceedances of the GHG reduction target reflected in Green LA is considered, for the purposes of this EIR, to be inconsistent with the City's ability to achieve the 2030 target in the subject plan and is therefore a significant impact.

Climate LA

As described in Section 4.5.3.1.4, a Departmental Action Plan for LAWA is included in Climate LA. Actions related to ground vehicles include establishing a rideshare program for employees and use of mass transit program for all airport personnel, promoting a bicycle program and adding bicycle lanes access to the airport, and establishing a hotel shuttle consolidation program. Implementation of the proposed Project would be consistent with, and represent realization of, those actions in Climate LA. Similar to other plans described above, Climate LA specifically recognizes the goal to reduce the city's emissions by 35 percent below 1990 levels by 2030, and also similar to above, the GHG emission levels estimated for future operation of the proposed Project would exceed that targeted level, which is considered, for the purposes of this EIR, to be inconsistent with the City's ability to achieve the 2030 target in the subject plan and, therefore, a significant impact.

Sustainable City Plan

As described in Section 4.5.3.1.4, pLAn includes a chapter on mobility and transit, which sets for a 20-year vision for the City to invest in rail, bus lines, pedestrian/bike safety, and complete neighborhoods that provide more mobility options and reduce vehicle miles traveled. Implementation of the proposed Project would be consistent with that vision, including, but not limited to, the Project's provisions for an improved connection with Metro light rail/transit, bicycle paths/routes and facilities, improved mobility options for airport travelers and employees, and reduced VMT. Within the mobility and transit chapter of pLAn are VMT reduction targets for long-term outcomes of the plan including to reduce daily VMT per capita by at least 5 percent in 2025 and 10 percent in 2035. Implementation of the proposed Project would not conflict with those targets given that the Project-related GHG emissions reductions for autos and trucks, which are a reflection of Project-related VMT reductions, would be 7 percent in 2024 (see Table 4.5-6) and 13 percent in 2035 (see Table 4.5-8). Additionally, elements of the proposed Project would support certain strategies and priority initiatives set forth for mobility and transit in pLAn, such as the Project's provisions for bike lanes and facilities, which complements the strategy/initiative to "build bike infrastructure (lane network, racks, districts)" and the Project's relationship to the future Metro Airport Connector station, which complements the strategy/initiative to "fund Airport Connector and keep build out on schedule."

City of Los Angeles Green Building Code

Development of the building components of the proposed Project will meet the applicable requirements of the LAGBC; therefore, implementation of the Project will not conflict with the LAGBC and impacts in that regard would be less than significant.

LAWA Sustainability Plan

As described in Section 4.5.3.1.4, LAWA's Sustainability Plan 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). Sustainability objectives within the Plan that are relevant to the proposed Project include Objective 5-Reduce Emissions from All Operations including Stationary and Mobile Sources, Objective 6-Reduce Single Occupancy Trips To, From, and Within LAWA Airports, and Objective 7 – Incorporate Sustainable Planning, Design, and Construction Practices into All Airport Projects. With regard to Objective 5, implementation of the proposed Project would meet the intent of the objective by reducing GHG emissions that would otherwise occur in the future without the Project (see Tables 4.5-6 and 4.5-7); however, the Project would not meet the numerical GHG reduction target stated in Target 5A of Objective 5 – to reduce GHG emissions to 35 percent below 1990 levels by 2030 (see discussion above under EO S-3-05 as to the reasons why). With regard to Objective 6, implementation of the proposed Project would reduce single occupancy trips to and from LAX through the enhanced connection with public transit, including Metro light rail, that would occur. With regard to Objective 7, implementation of the proposed Project includes the incorporation of sustainable planning, design, and construction practices into the Project, as described in Section 2.4.7 in Chapter 2, *Description of the Proposed Project*.

In summary, implementation of the proposed Project would not conflict with the overall intent of the LAWA Sustainability Plan; however, the GHG emission level associated with future operation (2024 and 2035) of the proposed Project do not conform to Objective Target 5A (i.e., reduce GHG emissions to 35 percent below 1990 levels by 2030). Notwithstanding that such future GHG emissions levels are due to future passenger activity levels at LAX that are beyond the scope of the proposed Project and that such future GHG emissions would be greater without implementation of the proposed Project, the numerical inconsistency with the target GHG reduction level is considered, for the purposes of this EIR, to be inconsistent with LAWA's ability to achieve the 2030 target in the subject plan and is therefore a significant impact.

LAWA Sustainable Airport Planning, Design and Construction Guidelines

As described in Section 4.5.3.1.4, the subject Guidelines were developed to provide a comprehensive set of performance standards focusing on sustainability specifically for Airport projects on a project-level basis. Implementation of the proposed Project will incorporate sustainability features as set forth in the LAWA Sustainable Airport Planning, Design and Construction Guidelines or otherwise accomplished through implementation of the new LAX Design Guidelines, specifically, Chapter 4-Sustainability, of the LAX Design Guidelines, as further described in Section 2.4.7. As such, implementation of the proposed Project will not conflict with the LAWA Sustainable Airport Planning, Design and Construction Guidelines.

LAWA Commitment to Carbon Management Goals

As described in Section 4.5.3.1.4, LAWA has committed to reducing GHG emissions from LAWA owned and operated sources below 1990 levels 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050. While these GHG reduction targets are similar to those of many of the plans described above, including plans applicable to the City of Los Angeles as a whole, the LAWA commitment to carbon management goals is specific to GHG emissions from LAWA owned and operated sources. Relative to the Project-related GHG emissions presented in Tables 4.5-6 and 4.5-7, the LAWA owned and operated GHG sources would include proposed construction emissions and Project-related energy demands and parking, specifically, the net increase in GHG emissions associated with energy demands and parking for future conditions with the Project compared to future conditions without the Project.

The GHG emissions associated with autos and trucks are not considered GHG sources owned and operated by LAWA. As can be determined from the values presented in Table 4.5-6, the GHG emissions associated with LAWA owned/controlled sources in 2024 would be 16,270 $MTCO_2e$ per year, which would be offset by the concomitant GHG reduction of 28,634 $MTCO_2e$ per year associated with Project-related non-LAWA owned/controlled sources (i.e., the GHG emissions associated with the LAWA owned/operated sources would not occur independent of the GHG emissions reductions associated with non-LAWA owned/operated sources). As can be determined from the values presented in Table 4.5-8, the GHG emissions associated with LAWA owned/controlled sources in 2035 would be 12,033 $MTCO_2e$ per year, which would be offset by the concomitant GHG reduction of 46,393 $MTCO_2e$ per year associated with Project-related non-LAWA owned/controlled sources. The 1990 LAX GHG inventory does not have an analogous basis of comparison for this type breakout of owned/controlled GHG sources (i.e., the LAWA owned/controlled energy demand associated with the APM is different from the source types in the 1990 baseline); however, on a "net-zero" basis in which the future emissions associated with the LAWA owned/controlled GHG sources are added to a zero baseline, the offsetting reduction in GHG emissions for the 2024 with Project condition would be 76 percent more than the GHG addition (i.e., GHG reduction is 12,364 $MTCO_2e$ more than the GHG addition of 16,270 $MTCO_2e$), and the offsetting reduction in GHG emissions for the 2035 with Project conditions would be 285 percent more than the GHG addition (i.e., GHG reduction is 34,360 $MTCO_2e$ more than the GHG addition of 12,033 $MTCO_2e$). Based on the above, implementation of the proposed Project is considered to be consistent with the LAWA Commitment to Carbon Management Goals and the Project impact would be less than significant.

4.5.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The impacts discussed below provide a program-level GHG analysis of the potential future related development. Further project-level environmental review under CEQA will be required in the future before any of these components can be implemented.

4.5.5.2.1 Construction Emissions

Annual GHG emissions for construction of the potential future related development are presented in **Table 4.5-10**, which, as shown, would total 16,824 $MTCO_2e$. That total CO_2e amortized over a 30-year period equals 561 $MTCO_2e$ per year.

4.5.5.2.2 Operational Emissions

As described in Section 4.5.4, *Thresholds of Significance*, the evaluation of whether potential future related development would generate GHG emissions that may have a significant impact on the environment is based on whether such mixed-use development would exceed the SCAQMD's efficiency threshold of 3.0 $MTCO_2e$ per year per service population (i.e., per employee). As indicated in Table 4.10-18 in Section 4.10, *Population and Housing*, the total employment estimated for the uses contemplated in the potential future related development is 1,902. The operational GHG emissions associated with potential future related development in 2035 is estimated to be 19,762 $MTCO_2e$ per year, which when added to the 561 $MTCO_2e$ per year of amortized construction emissions would total 20,323 $MTCO_2e$ per year. That total divided by 1,902 employees equals 10.7 $MTCO_2e$ per year per employee in 2035, which exceeds the efficiency threshold of 3.0 $MTCO_2e$ per year per service population (i.e., per employee). As such, the GHG emissions impact associated with potential future related development would be significant.

For informational purposes, **Table 4.5-11** quantifies the operational GHG emissions for the 2035 Future With Project scenario, including the proposed Project improvements and potential future related development, compared to the 2035 Future Without Project scenario. As shown, the incremental emissions between the 2035 Future Without Project scenario and the implementation of the 2035 Future With Project and Potential Future Related Development scenario show a net decrease in CO_2e. As such, the net decrease in GHG emissions in 2035 that would result from the proposed Project improvements would more than offset the GHG emissions associated with potential future related development; however, that does not change the conclusion that the GHG emissions of potential future related development would be a significant impact.

Also presented below, for information purposes, is **Table 4.5-12**, which provides a comparison of 2035 Future With Project and Potential Future Related Development to 2015 Existing Conditions. Relative to only the potential future related development, including associated construction emissions, there is no difference from the scenario discussed above (i.e., no difference from the comparison to 2035 Without Project conditions.

[Draft]

Table 4.5-10: Construction Greenhouse Gas Emissions for the Potential Future Related Development without Mitigation

	CONSTRUCTION GHG EMISSIONS, MT CO_{2E}/YEAR														
	CONSTRUCTION YEAR														
EMISSION SOURCE	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**TOTAL**
Off-Road, On-Site Equipment	0	0	0	0	0	0	0	0	1,428	2,865	2,553	2,239	1,000	156	10,242
On-Road, On-Site Trucks	0	0	0	0	0	0	0	0	492	983	873	764	340	53	3,505
On-Road, Off-Site Workers	0	0	0	0	0	0	0	0	156	485	407	353	178	24	1,603
On-Road, Off-Site Deliveries	0	0	0	0	0	0	0	0	82	703	530	92	56	9	1,473
All Sources (Metric Tons):	0	0	0	0	0	0	0	0	2,158	5,037	4,364	3,448	1,575	242	**16,824**

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Table 4.5-11: Emissions - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

EMISSION SOURCE	2035 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	316,229	266,687	-49,542
Trucks	46,060	49,209	3,149
Parking	21,111	20,667	-444
Proposed Project Construction (Amortized)	--	1,997	1,997
Potential Future Development Construction (Amortized)	--	561	561
Project Energy Demand [1/]	12,254 [2/]	22,734 [3/]	10,480
Future Related-Development	--	19,762	19,762
Total Net	**395,654**	**381,617**	**-14,307**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

Table 4.5-12: Emissions - 2035 Future With Project and Potential Future Related Development Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	266,687	-63,549
Trucks	47,722	49,209	1,487
Parking	23,500	20,667	-2,833
Proposed Project Construction (Amortized)	--	1,997	1,997
Potential Future Development Construction (Amortized)	--	561	561
Project Energy Demand [1/]	27,488	22,734 [3/]	-4,754
Future Related-Development	--	19,762	19,762
Total Net	**428,946**	**381,617**	**-47,329**

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

4.5.5.3 Consistency with Greenhouse Gas Reduction Plans

AB 32, EO S-3-05, EO B-30-15, and SB 32

AB 32, EO S-3, EO B-30-15, and SB 32 all pertain to reducing GHG emissions statewide, with AB 32 providing the most comprehensive framework for evaluating GHG conditions in California and defining strategies and initiatives for reducing GHG emissions, and the two Executive Orders and Senate Bill establishing GHG emission reduction targets beyond that identified in AB 32.

Relative to AB 32, as described in Section 4.5.5.1.3 the First Update to the Scoping Plan, which supports implementation of AB 32, includes recommendations and strategies to continue progress towards achieving GHG emissions reductions in the future. Within the transportation focus area strategies of the Scoping Plan Update is the need to plan and build communities to reduce vehicular GHG emissions and provide more transportation options. The potential future related development associated with the proposed Project would not conflict with that strategy in that it would provide for a mix of office, hotel, commercial, and conference center uses in close proximity to a major transit center and would be well suited to travelers at LAX, including the provision of easy access to and from the CTA, ITFs, and CONRAC via the APM. This integration of land uses and transit/ground access is also complementary to the development of sustainable communities, as set forth through the requirements of SB 375 and related requirement for developing Sustainable Communities Strategies, which is specifically recognized as a GHG emission reduction strategy in the Scoping Plan Update (see discussion below regarding the SCAG 2016-2040 RTP/SCS).

As also noted earlier, AB 32 included a target of reducing statewide GHG emissions to 1990 levels by 2020. Implementation of the subject development would not occur by 2020, in fact construction of the development is not anticipated to begin until after 2024; however, EO S-3, EO B-30-15, and SB 32 establish GHG reduction targets for more distant time frames. EO S-3-05 sets GHG reduction targets for all of California, including to reduce statewide GHG emissions by 2020 to 1990 levels and reduce statewide GHG emissions by 2050 to 80 percent of 1990 levels. EO S-03-05 and SB 32 set forth a target to reduce California GHG emissions to 40 percent below 1990 levels by 2030. Based on those GHG reduction targets and the statewide service populations, including population and employment, for those horizon years, GHG efficiency metrics can be estimated to identify the future per capita (i.e., per service population) GHG annual emissions that would be necessary to achieve those targets. Those efficiency metrics are estimated to be 4.7 $MTCO_2e$ per year per capita for 2020, 2.6 $MTCO_2e$ per year per capita for 2030, and 0.8 $MTCO_2e$ per year per capita for 2050.[49]

As indicated above, the GHG emissions associated with potential future related development at buildout in 2035 is estimated to be 10.7 $MTCO_2e$ per year per service population (i.e., per employee). As such, the GHG emissions impact associated with potential future related development would be significant because it is inconsistent with the State's ability to achieve the GHG reduction targets in EO S-3, EO B-30-15, and SB 32.

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[49] California Association of Environmental Professionals, *Draft White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California*, April 3, 2016, Table T-2.

SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

As described in Section 4.5.3.1.3, the SCAG 2016-2040 RTP/SCS sets forth eight goals for the region, including the goal of encouraging land use and growth patterns that facilitate transit and non-motorized transportation. The potential future related development associated with the proposed Project would not conflict with that goal in that it would provide for a mix of office, hotel, commercial, and conference center uses in close proximity to a major transit center and would be well suited to travelers at LAX, including the provision of easy access to and from the CTA, ITFs, and CONRAC via the APM. Additionally, the subject development is located within a High Quality Transit Area as designated by SCAG[50] which is considered to be well suited for such development. Implementation of the potential future related development would not conflict with the SCAG 2016-2040 RTP/SCS; hence, the impact would be less than significant.

Local GHG Reduction Plans

Potential future related development would comply with the applicable requirements of the LAGBC and LAWA sustainability requirements. In general, such development would not conflict with City plans, strategies, and initiatives for new development to occur in proximity to transit centers. Given that the potential future related development was not accounted for or anticipated in the 1990 GHG emissions inventory and the GHG emissions estimated for such development exceed the GHG efficiency thresholds set forth by the SCAQMD and the efficiency thresholds related to the state's GHG reduction targets tied to 1990 levels, similar to GHG reduction targets set by the City, the GHG emission levels associated with potential future related development would likely be inconsistent with achieving the numerical targets in the local GHG reduction plans, resulting in a significant impact.

4.5.5.4 Summary of Impacts

Based on the information presented above in Section 4.5.5.1, the GHG impacts associated with construction and operation of the proposed Project are summarized as follows:

- Implementation of the proposed Project compared to 2015 Baseline Conditions would result in a net increase in GHG emissions and, therefore, the GHG emissions impact under that scenario would be significant.
- Implementation of the proposed Project compared to 2024 Future Without Project conditions would result in a net decrease in GHG emissions and, therefore, the GHG emissions impact under that scenario would be less than significant.
- Implementation of the proposed Project compared to 2035 Future Without Project conditions would result in a net decrease in GHG emissions and, therefore, the GHG emissions impact under that scenario would be less than significant.

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[50] Southern California Association of Governments, HQTA in 2035 Map, Available: http://maps.scag.ca.gov/web/Ex_4.9_transit_tpp_08_35altb.jpg, accessed September 7, 2016.

- Implementation of the proposed Project would not conflict with most of the policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the proposed Project in 2024 would be inconsistent with the numerical targets for GHG reductions in the future that are reflected in some of those plans and policies. Notwithstanding that the future increases in GHG emissions associated with the proposed Project, as compared to the 1990 baseline levels that are the focus of the GHG reduction plans, are the result of future passenger activity levels at LAX that are beyond the scope and control of the Project and the fact that future GHG emissions levels with the Project would be less than future GHG emission levels that would occur without the Project, the numerical inconsistency with the GHG reduction targets in certain plans and policies is considered, for the purposes of this EIR, to be a significant impact.

Based on the information presented above in Section 4.5.5.2, the GHG impacts associated with construction and operation of the potential future related development are summarized as follows:

- Implementation of the potential future related development would result in GHG emissions levels that exceed per capita efficiency thresholds and, therefore would result in significant GHG impacts.
- Implementation of the potential future related development would not conflict with most of the policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the potential future related development in combination with the proposed Project in 2035 would be inconsistent with the numerical targets for GHG reductions in the future that are reflected in some of those plans and policies. Notwithstanding that the future increases in GHG emissions associated with the proposed Project including the potential future related development, as compared to the 1990 baseline levels that are the focus of the GHG reduction plans, are the result of future passenger activity levels at LAX that are beyond the scope and control of the Project and the fact that future GHG emissions levels with the Project would be less than future GHG emission levels that would occur without the Project, the numerical inconsistency with the GHG reduction targets in certain plans and policies is considered, for the purposes of this EIR, to be a significant impact.

4.5.6 CUMULATIVE IMPACTS

As discussed previously in Section 4.5.2, GHG impacts are exclusively cumulative impacts; hence, an evaluation of cumulative GHG impacts is already provided above and no further analysis is necessary.

4.5.7 MITIGATION MEASURES

LAWA has implemented a wide range of actions designed to reduce temporary, construction-related air pollutant emissions from its ongoing construction program to the maximum extent feasible and has established some of the most aggressive construction emissions reduction measures in southern California, 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. To achieve this commitment, LAWA has developed standard control measures which would be applied, as set forth below, to the proposed Project as mitigation measures to reduce or avoid GHG impacts.

The following Standard Control Measures are proposed as mitigation measures to reduce proposed Project (including potential future related development) GHG emissions impacts.

- **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 4.5-13.** Measures 1e, 1o, and 1p listed in the table were incorporated into the post-mitigation modeling (see Section 4.2.1.8.1 for modeling assumptions associated with these measures). However, the extent to which the remaining measures would reduce air quality impacts is not quantifiable; therefore, no estimate of the air quality benefit (i.e., emission reductions) of these measure is made in this analysis.

Table 4.5-13 (1 of 3): 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	Prior to final occupancy, the contractor shall demonstrate that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.	Fugitive Dust
1c	All roadways, driveways, sidewalks, etc., being installed as part of the project 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.	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.) 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 shall be conducted annually to determine what constitutes a best available emissions control device.	Off-Road Mobile
1f	Pave all construction access roads at least 100 feet onto the site from the main road.	Fugitive Dust
1g	To the extent feasible, have construction employees work/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.	On-Road Mobile
1i	Utilize on-site rock crushing facility, when feasible, during construction 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
1k	Suspend use of all construction equipment during a second-stage smog alert in the immediate vicinity of LAX.	Mobile and Stationary
1l	Prohibit tampering with construction equipment to increase horsepower or to defeat emission control devices.	Mobile and Stationary

[Draft]

Table 4.5-13 (2 of 3): Construction-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
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 provisions of LAWA Air Quality Control Measure 1q below.	On-Road Mobile
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 Standard Air Quality 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: o 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. o 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. o 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. o 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. o 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.	On-Road Mobile, & Off-Road Mobile

Table 4.5-13 (3 of 3): Construction-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
	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.	

Table A
Off-Road Compliance Step Down Schedule*

Compliance Alternative	Engine Standard	CARB-verified DECS (VDECS)
1	Tier 4 interim	N/A**
2	Tier 3	Level 3
3	Tier 2	Level 3
4	Tier 1	Level 3
5	Tier 2	Level 2
6	Tier 2	Level 1
7	Tier 3	Uncontrolled
8	Tier 2	Uncontrolled
9	Tier 1	Level 2
** 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.		
Equipment less than Tier 1, Level 2 shall not be permitted.		

Table B
On-Road Compliance Step Down Schedule*

Compliance Alternative	Engine Model Year	CARB-verified DECS (VDECS)
1	2007	N/A**
2	2004	Level 3
3	1998	Level 3
4	2004	Uncontrolled
5	1998	Uncontrolled
** 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.		
Equipment with a model year earlier than Model Year 1998 shall not be permitted.		

* 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.

NOTES: NQ = Not Quantified

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

- **LAX-AQ-2 – Transportation-Related Air Quality Control Measures.** This measure applies to mass transit, surface traffic, and on-site parking facilities. These measures provide infrastructure or policies that encourage the use of alternative modes of transportation or alternative fueled vehicles by airport passengers and employees. Specific measures are identified in **Table 4.5-14**. Because the airport does not directly control the mode choice or vehicle selection by passengers or employees, no estimate of the air quality benefit (i.e., emissions reduction) of the measures related specifically to vehicle travel is made in this analysis. However, the benefits associated with Measure 2f were evaluated in the post-mitigation modeling (see Section 4.2.1.8.1 for modeling assumptions associated with this measure).

Table 4.5-14: Transportation-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
2a	Provide free parking and preferential parking locations for ultra-low emission vehicles/super low emission vehicles/zero emission vehicles (ULEV/SULEV/ZEV) in all (including employee) LAX lots; provide free charging stations for ZEV; include public outreach to reduce air emissions from automobiles accessing airport parking.	Parking
2b	Develop measures to reduce air emissions of vehicles in line to exit parking lots such as pay-on-foot (before getting into car) to minimizing idle time at parking check out, including public outreach.	Parking
2c	Implement on-site circulation plan in parking lots to reduce time and associated air emissions from vehicles circulating through lots looking for parking.	Parking
2d	Promote "best-engine" technology for rental cars using on-airport rent-a-car facilities to reduce vehicle air emissions.	Clean Vehicle Fleets
2e	Consolidate non-rental car shuttles using SULEV/ZEV engines to reduce vehicle air emissions.	Clean Vehicle Fleets/Trip Reduction
2f	Cover, if feasible, any parking structures that receive direct sunlight, to reduce volatile emissions from vehicle gasoline tanks; and install solar panels on these roofs where feasible to supply electricity or hot water to reduce power production demand and associated air emissions at utility plants.	Energy Conservation
2g	Incorporate quick entry and exit parking systems in the project level design of new parking lots/structures.	Parking
2h	Include advanced signage in the design of new parking structures that could advise airport users of available parking spaces within the structure.	Parking

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

- **LAX-AQ-3 – Operations-Related Air Quality Control Measure.** The principle feature of this measure is the conversion of operational equipment to low and ultra-low emission technology (e.g., electric, fuel cell, and other future low-emission technologies). Because the penetration of electric equipment into the market cannot be determined, no estimate of the air quality benefit (i.e., emission reductions) of the operations-related control measure is made in this analysis. LAWA shall implement the specific measure identified in **Table 4.5-15**.

Table 4.5-15: Operations-Related Air Quality Control Measures

MEASURE NUMBER	MEASURE	TYPE OF MEASURE
3d	LAWA will promote the use of electric lawn mowers and leaf blowers, as these units become available for commercial use, for landscape maintenance associated with the proposed project.	General

SOURCE: LAWA, 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

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.

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. The LAX Design Guidelines include a section on sustainability initiatives to be considered for Airport projects that include energy efficiency and water conservation measures (see Appendix B). LAWA has committed to implementing, if feasible, various sustainability measures for different proposed Project elements that go above and beyond the Tier 1 requirements of the LAGBC, as shown in **Table 4.5-16**.

[Draft]

Table 4.5-16 (1 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Site Selection			
Locate project on a previously developed site within a 1/2 mile radius of at least ten basic services, listed in Section A5.103.1.	Mandatory		If Feasible
Select for development a brownfield in accordance with Section A5.103.2.1 or on a greyfield or infill site as defined in Section A5.102.	Mandatory	Mandatory	Mandatory
Site Preservation			
No local zoning requirement in place. Provide vegetated open space area adjacent to the building equal to the building footprint area.			If Feasible
No open space required in zoning ordinance. Provide vegetated open space equal to 20% of the total project site area.		If Feasible	If Feasible
Site Development			
Design storm water runoff rate and quantity in conformance with Section A5.106.3.1 and storm water runoff quality by Section A5.106.3.2 or by local requirements, whichever are stricter. 1. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50% impervious, implement a storm water management plan resulting in a 25% decrease in rate and quantity. 2. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).	Mandatory	Mandatory	Mandatory
Reduce peak runoff in compliance with Section 5.106.3.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in Section A5.106.4.	Mandatory	Mandatory	Mandatory
If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5% of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.	Mandatory	Mandatory	N/A
For buildings with over tenant-occupants, provide secure bicycle parking for 5% of tenant-occupied motorized vehicle parking capacity, with a minimum of one space.	Mandatory	If Feasible	Mandatory
Provide changing/shower facilities in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities.	Mandatory	If Feasible	Mandatory

Table 4.5-16 (2 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Multiple charging spaces required. When multiple charging spaces are required, plans shall include the location(s) and type of the EVSE, raceway method(s), wiring schematics and electrical calculations to verify that the electrical system has sufficient capacity to charge simultaneously all the electrical vehicles at all designated EV charging spaces at their full rated amperage. Plan design shall be based upon Level 2 EVSE at its maximum operating ampacity. Provide raceways from the electrical service panel to the designated parking areas that are required to be installed at the time of construction.	Mandatory	Mandatory	Mandatory
At least 10% of the total parking spaces, but not less than two, shall be capable of supporting installation of future EVSE.	If Feasible	Mandatory	Mandatory
A label stating "EV CHARGE CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel and the EV charging space.	Mandatory	Mandatory	Mandatory
Design parking capacity to meet but not exceed minimum local zoning requirements. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by 20%. 1. Use of on street parking or compact spaces, illustrated on the site plan; or			Mandatory
2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation.	If Feasible		Mandatory
Meet requirements in the current edition of the California Energy Code and comply with the following for exterior wall surfaces: Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south- and west-facing walls. East and west walls. Shading devices shall have 30% coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. South walls. Shading devices shall have 60% coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.	If Feasible		Mandatory
Use wall surfacing with SRI 25 (aged), for 75% of opaque wall areas.	Mandatory		Mandatory
Reduce nonroof heat islands and roof heat islands as follows: 5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 through 4 for 25% of site hardscape. 1. Provide shade (mature within 5 years of occupancy). 2. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549. 3. Use open-grid pavement system or pervious or permeable pavement system. 4. Use solar panel arrays to create a canopy shade system.	Mandatory	Mandatory	If Feasible

Table 4.5-16 (3 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Use one or a combination of strategies 1 through 3 for 75% of site hardscape. 1. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549.	Mandatory	Mandatory	If Feasible
2. Use open-grid pavement system or pervious or permeable pavement system.			If Feasible
3. Use solar panel arrays to create a canopy shade system.	If Feasible	If Feasible	If Feasible
Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25lbs/sf. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels.	If Feasible		If Feasible
Energy Efficiency			
Performance Requirements			
Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings as well as additions and alterations are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2.	If Feasible	Mandatory	If Feasible
Newly installed outdoor lighting power is no greater than 90% of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	Mandatory	Mandatory	Mandatory
For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 90% of the Title 24, Part 6 Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 85% of the Title 24, Part 6 Energy Budget for the Proposed Design Building.	Mandatory	Mandatory	Mandatory
Renewable Energy			
Use on-site renewable energy for at least 1% of the electrical service overcurrent protection device rating calculated in accordance with the 2013 Los Angeles Electrical Code or 1KW, whichever is greater, in addition to the electrical demand required to meet 1% of natural gas and propane use calculated in accordance with the 2013 Los Angeles Plumbing Code. Calculate renewable on-site system to meet the requirements of Section A5.211.1. Factor in net-metering, if offered by local utility, on an annual basis. Participate in the local utility's renewable energy portfolio program that provides a minimum of 50% electrical power from renewable sources. Maintain documentation through utility billings.	If Feasible	Mandatory	If Feasible
Space for future electrical solar system installation. Comply with Section 110.10 of the California Energy Code.	Mandatory	Mandatory	Mandatory

[Draft]

Table 4.5-16 (4 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Prewiring for future electrical solar system. Install conduit from the building roof, eave, or other locations approved by the Department to the electrical service equipment. The conduit shall be labeled as per the Los Angeles Fire Department requirements. Exception: Buildings not required to provide a solar zone per Section 110.10 of the California Energy Code.	Mandatory	Mandatory	Mandatory
Elevators, Escalators and Other Equipment			
In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion.	Mandatory	Mandatory	
A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use.	Mandatory	Mandatory	If Feasible
An escalator shall have a VVVF motor drive system that is fully regenerative when the escalator is in motion.	Mandatory	Mandatory	
Energy Efficient Steel Framing			
Design for and employ techniques to avoid thermal bridging.	Mandatory		Mandatory
Water Efficiency and Conservation			
Indoor Water Use			
Plumbing fixtures shall meet the maximum flow rate values shown in Table 5.303.2.3	Mandatory		Mandatory
A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 40% shall be provided. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed sues, may be used in the calculations demonstrating the 30, 35 or 40% reduction. The nonpotable water systems shall comply with the current edition of the Los Angeles Plumbing Code.	If Feasible	If Feasible	If Feasible

Table 4.5-16 (5 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: 1. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. 2. Tank-type water closets shall be certified to the performance criteria of the U.S EPA WaterSense Specification for Tank-Type Toilets. 3. The effective flush volume of urinals shall not exceed 0.5 gallons per flush. 4. Showerheads. a. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S EPA WaterSense Specification for Showerheads. b. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.	Mandatory	Mandatory	Mandatory
Dishwashers shall meet the criteria in Section A5.303.3(2)(a) and (b);	Mandatory	N/A	Mandatory
Ice makers shall be air cooled;	Mandatory	N/A	Mandatory
New buildings and facilities shall be dual plumbed for potable and recycled water systems.	If Feasible		If Feasible
Outdoor Water Use			
Automatic irrigation system controllers installed at the time of final inspection shall comply with the following: 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.	Mandatory	Mandatory	Mandatory
Reduce the use of potable water to a quantity that does not exceed 55% of ETo times the landscape area. A calculation demonstrating the applicable potable water use reduction shall be provided.	Mandatory	Mandatory	Mandatory
Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment.	Mandatory	Mandatory	Mandatory

Table 4.5-16 (6 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation.	Mandatory	Mandatory	Mandatory
Water Reuse			
Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the Los Angeles Plumbing Code.	Mandatory	Mandatory	Mandatory
Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) shall use recycled water.	If Feasible	If Feasible	If Feasible
Material Conservation and Resource Efficiency			
Material Sources			
Select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site.	Mandatory	Mandatory	If Feasible
Select bio-based building materials including certified wood products. Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle.	Mandatory		Mandatory
Use materials, equivalent in performance to virgin materials, with a total (combined) recycled content value (RCV) not be less than 15% of the total material cost of the project.	Mandatory	Mandatory	Mandatory
Use cement and concrete made with recycled products and complying with the following standards: 1. Portland cement shall meet ASTM C 150. 2. Blended hydraulic cement shall meet ASTM C 595. 3. Other Hydraulic Cements shall meet ASTM C 1157.	Mandatory	Mandatory	Mandatory
Unless otherwise directed by the Engineer of Record, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the department.	Mandatory	Mandatory	Mandatory
Use concrete made with one or more of the SCMs satisfying Equation A4.5-14.	Mandatory	Mandatory	Mandatory

Table 4.5-16 (7 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Any of the following measures shall be permitted to be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2: 1. The following measures may be used in the manufacture of cement: a. Alternative fuels where permitted by state or local air quality standards. b. Alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of Section A5.211. 2. Concrete. The following measures may be used in the manufacture of concrete. a. Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211. b. Recycled aggregates. Concrete made with one or more of the materials listed in Section A5.405.5.3.2.2. c. Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C1602.	If Feasible	If Feasible	If Feasible
Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer of Record.	Mandatory	Mandatory	Mandatory
Enhanced Durability and Reduced Maintenance			
Compared to other products in a given category, choose materials from the following for a minimum of 5% of the total value, based on estimated cost of materials on the project. Select materials that require little, if any, finishing.	Mandatory	Mandatory	Mandatory
Construction Waste Reduction, Disposal and Recycling			
Construction waste management. Comply with Section 66.32 of the Los Angeles Municipal Code.	Mandatory	Mandatory	Mandatory
100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.	Mandatory	Mandatory	Mandatory
Divert to recycle or salvage at least 80% of nonhazardous construction and demolition waste generated at the site.	Mandatory	Mandatory	Mandatory
A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided.	Mandatory	Mandatory	Mandatory
Life Cycle Assessment			
Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years.	If Feasible	If Feasible	If Feasible
Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10% improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building.	If Feasible	If Feasible	If Feasible

Table 4.5-16 (8 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change.	If Feasible	If Feasible	If Feasible
Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6.	If Feasible	If Feasible	If Feasible
Documentation of compliance shall be provided as follows: 1. The assessment is performed in accordance with ISO 14044. 2. The project meets the requirements of other parts of Title 24. 3. A copy of the analysis shall be made available to the enforcement authority. 4. A copy of the analysis and any maintenance or training recommendations shall be included in the operation and maintenance manual.	If Feasible	If Feasible	If Feasible
Environmental Quality			
Pollutant Control			
Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2. A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as listed in Items 1 and 2 in Section A5.504.1.2.	Mandatory	Mandatory	Mandatory
Employ additional measures as listed in Items 1 through 5 in Section A5.504.1.3.	If Feasible	If Feasible	If Feasible
If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy. Applies to additions or alterations.	Mandatory		Mandatory
Flush out the building per Section A5.504.2 prior to occupancy or if the building is occupied.	Mandatory		Mandatory
A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United State Environmental Protection Agency (U.S. EPA) and in accordance with Section A5.504.2.1.2. Retest as required in Section A5.504.2.1.3.	Mandatory		Mandatory

Table 4.5-16 (9 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Allowable levels of contaminant concentrations measured by testing shall not exceed the following: 1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million; 2. Formaldehyde: 27 parts per billion; 3. Particulates (PM10): 50 micrograms per cubic meter; 4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and 5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter. Testing of indoor air quality should include the elements listed in Items 1 through 4.	If Feasible	If Feasible	If Feasible
For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance.	Mandatory	Mandatory	Mandatory
Adhesives and sealants used on the project shall meet the requirements of the following standards: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. 2. Aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507	Mandatory	Mandatory	Mandatory
Aerosol paints and coatings shall meet the Product - Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520 et seq). Verification of compliance with this section shall be provided at the request of the department.	Mandatory	Mandatory	Mandatory
Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.	Mandatory		Mandatory
Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins.	Mandatory		Mandatory

Table 4.5-16 (10 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Documentation. Verification of compliance with this section shall be provided as requested by the department. Documentation shall include at least one of the following. 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.) 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the department.	Mandatory		Mandatory
Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	Mandatory	Mandatory	Mandatory
For 100% of floor area scheduled to receive resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the FloorScore program of the Resilient Floor Covering Institute; or meet California Department of Public Health 2010 Specification 01350. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	Mandatory	Mandatory	Mandatory
Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.	Mandatory		Mandatory
Comply with Chapter 8 in Title 24, Part 2 and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.	If Feasible	If Feasible	If Feasible
Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1.	Mandatory		Mandatory
In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2.	Mandatory		Mandatory
In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 13.	Mandatory		Mandatory

Table 4.5-16 (11 of 11): LAX Design Guidelines Sustainability Measures

MEASURES	CONRAC	ITFs	APM MAINTENANCE AND STORAGE FACILITY
Environmental Comfort			
Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2. A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the 2007 California Energy Code by Sections A5.507.1.1.1 and A5.507.1.1.2.	If Feasible		If Feasible
Lighting. Provide individual task lighting and/or daylighting controls for at least 90% of the building occupants.	If Feasible		If Feasible
Thermal comfort. Provide individual thermal comfort controls for at least 50% of the building occupants by Items 1 and 2 in Section A5.507.1.1.2.	If Feasible		If Feasible
Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.	If Feasible	If Feasible	If Feasible
Daylight. Provide daylit spaces as required for toplighting and sidelighting in the California Energy Code. In constructing a design, consider Items 1 through 4 in Section A5.507.3.	If Feasible	Mandatory	Mandatory
Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2.	Mandatory		Mandatory
Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).	Mandatory		Mandatory
An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	Mandatory		Mandatory
Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.	Mandatory		Mandatory
Outdoor Air Quality			
Install HVAC and refrigeration equipment that does not contain CFCs.	Mandatory	Mandatory	Mandatory
Install fire suppression equipment that does not contain Halons.	Mandatory	Mandatory	Mandatory
Install HVAC and refrigeration equipment that does not contain HCFCs.	Mandatory	Mandatory	Mandatory

SOURCE: California Building Standards Commission, California Code of Regulations Title 24, Part 11, *2013 California Green Building Standards Code*, Effective January 1, 2014.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

In addition to these measures, MM-GHG (LAMP)-1, Incorporate Solar Energy into LAX Landside Access Modernization Program Facilities, identified below, would reduce secondary GHG emissions associated with Project-related electrical demand:

- **MM-GHG (LAMP)-1 - Incorporate Solar Energy into LAX Landside Access Modernization Program Facilities.** LAWA will provide solar power generation totaling a minimum of 5.70 megawatts in AC output capacity (MWAC) as part of the implementation of the LAX Landside Access Modernization Program.

Finally, MM-AQ (LAMP)-1, Preferential Use of Renewable Diesel Fuel, identified in Section 4.2.1.7 and repeated below, would also reduce GHG emissions from construction equipment and engines.

- **MM-AQ (LAMP)-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, to the extent feasible. Renewable diesel fuel is available locally and has been shown to reduce criteria pollutant and greenhouse gas emissions from diesel engines.[51]

4.5.8 IMPACTS AFTER MITIGATION

4.5.8.1.1 Mitigated Construction Impacts

Mitigation Measure MM-AQ (LAMP)-1 would require that diesel fueled construction equipment and trucks utilize renewable diesel fuels as a means of reducing greenhouse gas emissions during construction of the proposed Project, which was quantified in the analysis presented below. Although additional mitigation measures for the reduction of GHG emissions were identified as mitigation in Section 4.5.7, for the purposes of this analysis, no further reductions to construction related GHG emissions were quantified. The mitigated construction emissions of GHGs for the entire construction period are summarized in **Table 4.5-17**, which, as shown, would total 43,071 MTCO2e. The 30-year amortized emissions for construction of Phase 1 and Phase 2 of the proposed Project would be 1,436 MT CO_2e per year.

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

[Draft]

Table 4.5-17: Construction Greenhouse Gas Emissions for the proposed Project with Mitigation

	CONSTRUCTION GHG EMISSIONS, MT CO_{2e}/year														
	Construction Year														
Emission Source	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**TOTAL**
Off-Road, On-Site Equipment	131	2,421	4,558	4,119	2,380	1,318	1,210	361	88	12	92	0	0	0	16,689
On-Road, On-Site Trucks	23	1,171	2,485	2,884	1,709	838	341	108	13	8	29	0	0	0	9,609
On-Road, Off-Site Workers	22	2,322	2,983	2,260	2,052	970	999	410	7	5	20	0	0	0	12,052
On-Road, Off-Site Deliveries	6	298	871	1,234	870	732	458	209	0	4	39	0	0	0	4,721
All Sources (Metric Tons):	182	6,212	10,897	10,497	7,011	3,858	3,009	1,087	108	29	181	0	0	0	**43,071**

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

4.5.8.1.2 Mitigated Operational Emissions

Although mitigation measures for the reduction of operations-related GHG emissions were identified as mitigation in Section 4.5.7, for the purposes of this analysis, no reductions in emissions were quantified for these measures. However, as detailed in Section 4.5.7, the proposed Project would incorporate solar power generation as a means of reducing greenhouse gas emissions due to electrical requirements of the proposed Project's operations, which was quantified in the analysis presented below. Mitigation Measure MM-GHG (LAMP)-1 would require the proposed Project to incorporate solar power generation totaling a minimum of 5.70 megawatts in AC output capacity (MW_{AC}). This measure was quantified as a reduction of 10,200 megawatt hours (MWh) from the total operational electrical power demand of the proposed Project in 2024, and assumes a decrease in power generating efficiency at a rate of 1 to 2 percent per year thereafter. The inclusion of solar electrical generation would reduce annual operational emissions due to the generation of electricity by approximately 12 percent.

Incorporation of MM-GHG (LAMP)-1 would reduce the impacts associated with the 2024 With Project and 2035 Future With Project scenarios. Therefore, the mitigated analysis presented below compares emissions from the following scenarios: the 2015 With Project compared to the 2015 existing conditions, the 2024 With Project compared to the 2024 Without Project scenario, and the 2035 With Project compared to the 2035 Without Project scenario.

2015 With Project and Mitigation Compared to 2015 Existing Conditions

A comparison of emissions from the 2015 With Project and Mitigation scenario to 2015 existing conditions is shown in **Table 4.5-18**. As shown, the incremental emissions between the 2015 existing conditions and the implementation of the 2015 With Project and Mitigation scenario are a net decrease in CO_2e. Therefore, GHG emissions resulting from the 2015 Project construction and operations with Mitigation would not have been a significant impact on climate change over the 2015 existing conditions, if the project had, hypothetically, been completed in 2015.

Table 4.5-18: Mitigated Emissions - 2015 With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 BASELINE (METRIC TONS CO_2e)	2015 WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	2,511,630	2,501,574	-10,055
Trucks	531,631	519,234	-12,397
Parking	23,500	22,727	-773
proposed Project Construction (Amortized)	--	1,436	1,436
Other Project Mitigated Emissions	27,488 [1/]	43,232 [2/]	15,744
Total Net	**3,094,249**	**3,088,203**	**-6,045**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

2/ Assumes that the electrical demand power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

2024 Future With Project and Mitigation Compared to 2024 Future Without Project

A comparison of emissions from the 2024 Future With Project and Mitigation scenario and the 2024 Future Without Project scenario is shown in **Table 4.5-19**. As shown, the incremental emissions between the 2024 Future Without Project scenario and the implementation of the 2024 Future With Project and Mitigation scenario are a net decrease in CO_2e. Therefore, under future 2024 conditions, GHG emissions resulting from the implementation of the proposed Project with Mitigation would not result in a significant impact on climate change.

Table 4.5-19: Mitigated Emissions - 2024 Future With Project Compared to 2024 Future Without Project

EMISSION SOURCE	2024 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2024 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	364,405	335,624	-28,781
Trucks	37,086	37,234	147
Parking	23,167	22,477	-690
proposed Project Construction (Amortized)	--	1,436	1,436
Project Energy Demand [1/]	18,487 [2/]	29,621 [3/]	11,134
Total Net	**443,145**	**426,3812**	**-16,754**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 Mitigated Emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

2024 Future With Project and Mitigation Compared to 2015 Existing Conditions

For informational purposes, a comparison of emissions from the 2024 Future With Project and Mitigation scenario and the 2015 Existing Conditions is shown in **Table 4.5-20**. As shown, the incremental emissions between the 2015 Existing Conditions and the implementation of the 2024 Future With Project and Mitigation scenario are a net decrease in CO_2e. Therefore, when compared with existing conditions, GHG emissions resulting from the implementation of the proposed Project with Mitigation would not result in a significant impact on climate change.

Table 4.5-20: Mitigated Emissions - 2024 Future With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2024 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	335,624	5,388
Trucks	47,722	37,234	-10,488
Parking	23,500	22,477	-1,023
proposed Project Construction (Amortized)	--	1,436	1,436
Project Energy Demand [1/]	27,488 [2/]	29,621 [3/]	2,133
Total Net	**428,946**	**426,392**	**-2,554**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 Mitigated Emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

2035 Future With Project and Mitigation Compared to 2035 Future Without Project

A comparison of emissions from the 2035 Future With Project and Mitigation scenario and the 2035 Future Without Project scenario is shown in **Table 4.5-21**. As shown, the incremental emissions between the 2035 Future Without Project scenario and the implementation of the 2035 Future With Project scenario are a net decrease in CO_2e. Therefore, under future 2035 conditions, GHG emissions resulting from the implementation of the proposed Project with Mitigation (excluding the construction and operation of potential future related development) would not result in a significant impact on climate change.

Table 4.5-21: Mitigated Emissions - 2035 Future With Project Compared to 2035 Future Without Project

EMISSION SOURCE	2035 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	316,229	266,687	-49,542
Trucks	46,060	49,209	3,149
Parking	21,111	20,667	-444
proposed Project Construction (Amortized)	--	1,436	1,436
Project Energy Demand 1/	12,254 2/	20,500 3/	8,246
Total Net	**395,654**	**358,499**	**-37,155**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 Mitigated Emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

2035 Future With Project and Mitigation Compared to 2015 Existing Conditions

For informational purposes, a comparison of emissions from the 2035 Future With Project and Mitigation scenario and the 2015 Existing Conditions is shown in **Table 4.5-22**. As shown, the incremental emissions between 2015 Existing Conditions and the implementation of the 2035 Future With Project scenario are a net decrease in CO_2e. Therefore, when compared with existing conditions, GHG emissions resulting from the implementation of the proposed Project with Mitigation (excluding the construction and operation of potential future related development) would not result in a significant impact on climate change.

Table 4.5-22: Mitigated Emissions - 2035 Future With Project Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	266,687	-63,549
Trucks	47,722	49,209	1,487
Parking	23,500	20,667	-2,833
proposed Project Construction (Amortized)	--	1,436	1,436
Project Energy Demand [1/]	27,488 [2/]	20,500 [3/]	-6,988
Total Net	**428,946**	**358,499**	**-70,447**
GHG Threshold for Transportation Projects			No Net Increase
Above the Threshold?			**No**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 Mitigated Emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.

PREPARED BY: CDM Smith, September 2016.

4.5.8.2 LAX Landside Access Modernization Program Potential Future Related Development

4.5.8.2.1 Mitigated Construction Impacts

Mitigation Measure MM-AQ (LAMP)-1 would require that diesel fueled construction equipment and trucks to utilize renewable diesel fuels as a means of reducing greenhouse gas emissions during construction of the proposed Project, which was quantified in the analysis summarized in **Table 4.5-23**. Although additional mitigation measures for the reduction of GHG emissions were identified as mitigation in Section 4.5.7, for the purposes of this analysis, no further reductions to construction related GHG emissions were quantified. The mitigated potential future related development construction emissions would total 11,449 MTCO2e, and the 30-year amortized construction emissions from the potential future related development would be 382 MT CO_2e per year.

[Draft]

Table 4.5-23: Construction Greenhouse Gas Emissions for the Potential Future Related Development with Mitigation

	CONSTRUCTION GHG EMISSIONS, MT CO_{2E}/YEAR														
	CONSTRUCTION YEAR														
EMISSION SOURCE	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**TOTAL**
Off-Road, On-Site Equipment	0	0	0	0	0	0	0	0	914	1,834	1,634	1,433	640	100	6,555
On-Road, On-Site Trucks	0	0	0	0	0	0	0	0	328	659	586	512	229	36	2,348
On-Road, Off-Site Workers	0	0	0	0	0	0	0	0	156	485	407	353	178	24	1,603
On-Road, Off-Site Deliveries	0	0	0	0	0	0	0	0	53	450	340	59	36	6	943
All Sources (Metric Tons):	0	0	0	0	0	0	0	0	1,450	3,428	2,966	2,357	1,083	165	**11,449**

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

4.5.8.2.2 Mitigated Operational Emissions

The impacts discussed below provide a program-level GHG analysis of conceptually planned components of the future phase(s) of the LAX Landside Access Modernization Program. Further project-level environmental review under CEQA will be required in the future before any of these components can be implemented.

In estimating the mitigated operational emissions associated with potential future related development, Standard Control Measures were identified as mitigation measures; only the associated GHG emissions reductions were quantified using CalEEMod default values for implementation of carpool incentives, transportation improvements, and requirement of electric grounds keeping equipment. Additionally, Mitigation Measure MM-GHG (LAMP)-1 would require new solar power generation as part of the proposed project. The mitigated operational emissions associated with potential future related development along with mitigated construction emissions, as amortized over a 30-year period, would total 16,181 MT CO_2e per year in 2035. Based on a total of 1,902 employees for the operation of such development, the mitigated GHG emissions would be 8.5 MT CO_2e per year per employee; which exceeds the efficiency threshold of 3.0 MT CO_2e per year in 2035. As such, the impact would remain significant, even with mitigation.

For informational purposes, **Table 4.5-24** quantifies the operational GHG emissions for the mitigated 2035 Future With Project scenario, including the proposed Project improvements and potential future related development, and the 2035 Future Without Project scenario. As shown, the incremental emissions between the 2035 Future Without Project scenario and the implementation of the mitigated 2035 Future With Project and potential future related development scenario show a net decrease in CO_2e. Notwithstanding, the mitigated GHG emissions associated with potential future related development would be a significant impact.

Also presented below, for information purposes, is **Table 4.5-25**, which provides a comparison of the Mitigated Emissions for 2035 Future With Project and Potential Future Related Development to 2015 Existing Conditions. Relative to only the potential future related development, including associated construction emissions, there is no difference from the scenario discussed above (i.e., no difference from the comparison to 2035 Without Project conditions).

[Draft]

Table 4.5-24: Mitigated Emissions - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

EMISSION SOURCE	2035 FUTURE WITHOUT PROJECT (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	316,229	266,687	-49,542
Trucks	46,060	49,209	3,149
Parking	21,111	20,667	-444
proposed Project Construction (Amortized)	--	1,436	1,436
Potential Future Development Construction (Amortized)	--	382	382
Project Energy Demand [1/]	12,254 [2/]	20,500 [3/]	8,246
Future Related-Development	--	15,799	15,799
Total Net	**395,654**	**374,680**	**-20,974**

NOTES:

1/ CO_2 emission rates are estimated based on LADWP 2015 Final Power Integrated Resource Plan for reduction of CO_2 Mitigated Emissions between 2015 and 2030.

2/ Assumes that multiple existing rental car facilities and parking garages have roughly equivalent power demands as the proposed Project CONRAC facilities and ITF parking garages.

3/ Assumes that the power factor is 0.85 (85 percent) when converting maximum load to kilowatts (kW) and that annual consumption is 90 percent of maximum hourly consumption. With proposed Project value includes demand at all APM system stations, substations, bridges, and maintenance/storage facility; CONRAC facility; ITF facilities; and associated garages.

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

Table 4.5-25: Mitigated Emissions - 2035 Future With Project and Potential Future Related Development Compared to 2015 Existing Conditions

EMISSION SOURCE	2015 EXISTING CONDITIONS (METRIC TONS CO_2e)	2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT (METRIC TONS CO_2e)	INCREMENTAL DIFFERENCE (METRIC TONS CO_2e)
Autos	330,236	266,687	-63,549
Trucks	47,722	49,209	1,487
Parking	23,500	20,667	-2,833
Proposed Project Construction (Amortized)	--	1,436	1,436
Potential Future Development Construction (Amortized)	--	382	382
Project Energy Demand [1/]	27,488	20,500 [3/]	-6,988
Future Related-Development	--	15,799	15,799
Total Net	**428,946**	**374,680**	**-54,266**

SOURCE: Appendix F of this EIR.
PREPARED BY: CDM Smith, September 2016.

4.5.8.3 Summary of Impacts after Mitigation

Based on the information presented above regarding mitigation, the mitigated GHG impacts associated with construction and operation of the proposed Project are summarized as follows:

- Implementation of the proposed Project, with mitigation, compared to 2015 Baseline Conditions would result in a net decrease in GHG emissions and, therefore, the GHG emissions impact under that mitigated scenario would be less than significant.
- Implementation of the proposed Project, even without mitigation, compared to 2024 Future Without Project conditions would result in a net decrease in GHG emissions and, therefore, the GHG emissions impact under that scenario would be less than significant without mitigation, but the impact would nevertheless be reduced with mitigation.
- Implementation of the proposed Project, even without mitigation, compared to 2035 Future Without Project conditions would result in a net decrease in GHG emissions and, therefore, the GHG emissions impact under that scenario would be less than significant without mitigation, but the impact would nevertheless be reduced with mitigation.
- Implementation of the proposed Project would not conflict with most policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation would be inconsistent with the numerical targets for GHG reductions in the future that are reflected in some of those plans and policies. Notwithstanding that the future increases in GHG emissions associated with Project, as compared to the 1990 baseline levels that are the focus of the GHG reduction plans, are the result of future passenger activity levels at LAX that are beyond the scope and control of the proposed Project and the fact that future GHG emissions levels with the proposed Project would be less than future GHG emission levels that would occur without the Project, the numerical inconsistency with the GHG reduction targets is considered, for the purposes of this EIR, to be a significant impact even with mitigation.

Based on the information presented above regarding mitigation, the mitigated GHG impacts associated with construction and operation of the potential future related development are summarized as follows:

- Implementation of the potential future related development would result in GHG emissions levels that exceed per capita efficiency thresholds and, therefore would result in significant GHG impacts.

- Implementation of the potential future related development would result in GHG emissions levels that exceed per capita efficiency thresholds and, therefore would result in significant GHG impacts.

- Implementation of the potential future related development would not conflict with most of the policies and strategies set forth in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs; however, the GHG emissions levels associated with future operation of the potential future related development in combination with the proposed Project in 2035 would be inconsistent with the numerical targets for GHG reductions in the future that are reflected in some of those plans and policies. Notwithstanding that the future increases in GHG emissions associated with the proposed Project including the potential future related development, as compared to the 1990 baseline levels that are the focus of the GHG reduction plans, are the result of future passenger activity levels at LAX that are beyond the scope and control of the Project and the fact that future GHG emissions levels with the Project would be less than future GHG emission levels that would occur without the Project, the numerical inconsistency with the GHG reduction targets in certain plans and policies is considered, for the purposes of this EIR, to be a significant impact.

4.5.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

GHG emissions associated with the construction and operation of the proposed Project would result in an unavoidable significant impact. Similarly, construction and operation of potential future related development would result in an unavoidable significant impact. In sum, the impacts of the proposed Project on global climate change would be significant and unavoidable.

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4.6 Hazards and Hazardous Materials

4.6.1 HAZARDOUS MATERIALS

4.6.1.1 Introduction

This section addresses whether the proposed Project would result in impacts related to the release of hazardous materials from foreseeable upset or accident, the emissions of hazardous materials within proximity of a school, and the presence of documented hazardous materials sites within the Project area.

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 hazardous materials. 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 hazardous materials does not require any additional analysis in this EIR:

- Potential impacts related to the routine transport, use, or disposal of hazardous materials were evaluated and determined to have a "Less than Significant Impact" in the Initial Study. As discussed therein, construction and operation of the proposed Project would comply with existing federal, state, and local regulations and routine precautions would reduce the potential for accidental releases of a hazardous material or substance to occur and would minimize the impact of an accident should one occur. As such, the proposed Project would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials and substances. Therefore, this issue is not addressed any further within this section.

4.6.1.2 Methodology

As noted in the Initial Study, the issues of concern are the release of hazardous materials from foreseeable upset or accident; the emissions of hazardous materials within proximity of a school; and the presence of documented hazardous materials sites within the Project area. To analyze the potential impact of hazardous materials, the study area was assessed and existing and proposed uses were evaluated.

A Hazardous Materials Assessment (HMA) for the proposed Project was conducted in October 2015 by Ninyo & Moore to identify contaminated or potentially contaminated areas and other potential hazardous materials issues. The HMA is included as **Appendix K** of this EIR. The HMA included site reconnaissance, database search, and review of existing environmental reports. To evaluate the likelihood of encountering hazardous substances during construction activities, Ninyo & Moore performed an evaluation of the site and properties adjoining the site with regard to the potential presence of hazardous substances. A database radii search of readily available government and regulatory agency environmental lists for the Project site and for properties within one-eighth mile of the Project site was used to assess potential impacts related to the location of hazardous materials within proximity to the Project site. The likelihood of specific areas of the Project site being contaminated by hazardous materials was ranked as high, moderate, or low based on the following descriptions:

- High: Property with known or probable contamination within the Project area. An example of a property in this category would be a leaking underground storage tank (LUST) facility where remediation had not been started or was not yet finished.
- Moderate: Property with potential or suspected contamination within the Project area. Examples of properties in this category would be LUST facilities in final stages of remediation or in post-remediation monitoring. A second example would be a property with known use and storage of hazardous materials that had received violation notices from an inspecting agency, or where visual evidence of inadequate chemical and storage practices (such as significant staining) were observed but no environmental assessments had occurred. Also included in this category are facilities where underground storage tanks (USTs) are likely present and/or facilities that have used significant quantities of hazardous materials but appear to be abandoned by their former operators.
- Low: Property that uses or stores hazardous materials but with no significant violations, known releases, or evidence of inadequate chemical handling practices. Example properties would be properties with UST or dry cleaning facilities with no documented releases or where remediation of previous releases had been completed.

In January 2016, Ninyo & Moore followed up their HMA with a Preliminary Geotechnical Evaluation to evaluate geotechnical conditions in the Project area. The Preliminary Geotechnical Evaluation is included as part of Appendix K of this EIR. This study characterized the general soil and groundwater conditions at the site and evaluated the potential impacts of using pile foundations for the Project considering reported site contamination in the vicinity. The geotechnical evaluation was based on a review of readily available geologic and environmental data and published geotechnical literature pertinent to the Project vicinity.

Furthermore, Ninyo & Moore prepared an addendum for their HMA in June 2016 to summarize two reports that provide a supplemental assessment of the potential presence of hazardous substances on the Project site. The HMA Addendum Letter is included in Appendix K of this EIR. The two supplemental reports included: (1) an off-site groundwater assessment progress report and work plan concerning properties near the Honeywell Aviation property, and (2) an *in-situ* chemical oxidation pilot test work plan for the Honeywell Sepulveda property. These tests were conducted on two areas of the Project site to further analyze existing groundwater conditions and to evaluate the efficiency and effectiveness of proposed remedial measures for contaminated groundwater. The HMA Addendum Letter identifies appropriate recommendations as a result of the conclusions from these additional reports.

Information from the HMA, Preliminary Geotechnical Evaluation, and HMA Addendum Letter was used to determine impacts to/from hazardous materials that may result from implementation of the proposed Project.

4.6.1.3 Existing Conditions

4.6.1.3.1 Regulatory Setting

The following presents the regulatory framework, laws, ordinances, and regulations governing the proposed Project.

Federal

Occupational Safety and Health Act

The Occupational Safety and Health Act (OSHA), (29 USC Section 651 et seq., 29 CFR Section 1910 et seq.), is intended to create a safe workplace. OSHA establishes procedures and standards for the safe handling and storage of hazardous chemicals. In addition, a safety data sheet (SDS) containing specified information must be provided to customers, making them aware of chemical hazards to which they may be exposed. OSHA also establishes standards regarding the safe exposure limits for chemicals to which construction workers may be exposed. Safety and Health Regulation for Construction, (29 CFR Section 1926.65 Appendix C), contains Compliance Guidelines for construction activities, which include occupational health and environmental controls to protect worker health and safety. These Guidelines articulate the required health and safety plan(s) to be developed and implemented during construction, including associated training, protective equipment, evacuation plans, chains of command, and emergency response procedures.

Emergency Planning and Community Right-to-Know Act (EPCRA)

EPCRA (42 USC Section 116 et seq., 40 CFR Section 350 et seq.) requires facilities that store or use hazardous chemicals to submit a specified plan with copies of SDSs to the State Emergency Response Center (SERC) and the local emergency planning center (LEPC). Additionally, facilities must submit an annual inventory list with details on the amount, location, and storage method of regulated chemicals present at the facility. 40 CFR § 370.20 et seq.

Toxic Substances Control Act (TSCA)

TSCA, (15 USC Section 2601 et seq., 40 CFR Section 700 et seq.) enables the United States Environmental Protection Agency (USEPA) to track industrial chemicals produced or imported into the United States. USEPA screens the chemicals and can require testing to determine if any pose an environmental or human-health hazard. Any chemical that poses an unreasonable risk then can be regulated or banned from manufacturing or importation. Congress enacted major amendments to TSCA in 2016 via the Lautenberg Act (HR 2576), which strengthened USEPA's authority to regulate chemicals.

Clean Air Act

Section 112 of the Clean Air Act requires USEPA to set air toxics standards for regulating the emissions of hazardous air pollutants. The 1990 federal Clean Air Act Amendments establish a program designed to prevent the release of highly hazardous chemicals.

Resource Conservation and Recovery Act (RCRA)

To protect groundwater, RCRA Subtitle I (42 USC Section 6991 et seq., 40 CFR Section 280 et seq.) establishes design, construction, and operational standards to prevent chemical releases from USTs. RCRA Subtitle I regulates USTs containing hazardous substances or petroleum. USEPA sets standards governing tank construction based on whether the tank is new or whether an existing tank is upgraded. USEPA also imposes operation and maintenance procedures for UST owners and operators, and establishes reporting requirements from regulated tanks that release substances into the environment.

RCRA Subtitle C (42 USC Section 6901 et seq.) is intended to proactively manage hazardous waste and to minimize and avoid hazardous waste contamination. RCRA Subtitle C addresses hazardous waste from cradle-to-grave, regulating the generation, transport, storage, treatment, and disposal of hazardous waste. RCRA, Subtitle I, the Hazardous and Solid Waste Amendments (HSWA) of 1984, expanded and clarified RCRA Subtitle C. USEPA administers RCRA Subtitle C pursuant to regulations found at 40 CFR Section 260 et seq. and has delegated RCRA Subtitle C implementation and enforcement within California to the state.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, also known as Superfund, establishes procedures to identify and clean up chemically contaminated sites posing a significant environmental health threat. 42 USC 9601 et seq. The program also establishes a liability process that governs which parties are responsible for cleanup costs. Under CERCLA, USEPA is authorized to clean up hazardous waste contaminated sites and seek reimbursement from liable individuals for expenses incurred during the cleanup process. 42 USC Section 9606(a). USEPA administers CERCLA. 40 CFR Section 300 et seq.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act regulates transport of hazardous materials on water, rail, highways, airplanes, and pipelines, 49 USC Section 1801 et seq. The Department of Transportation (DOT) administers the Act, pursuant to 49 CFR § 100 § et seq.

Executive Order 12088, Federal Compliance with Pollution Control

Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved. As implementation of the proposed Project would require various federal approvals, LAWA would adhere to Executive Order 12088 to ensure compliance with applicable federal pollution control standards.

State

Hazardous Waste Control Law (HWCL)

The HWCL is the principal state law regulating hazardous waste. Health & Safety Code Section 25100 et seq.; 22 CCR§. § 66260 et seq. In many cases, the State statutes and regulations are more stringent than the federal rules. The HWCL covers hazardous waste generation, storage, transportation, and disposal.

Hazardous Materials Release Response Plans and Inventory Act

The Hazardous Materials Release Response Plans and Inventory Act (Health & Safety Code Section 25500 et seq.), also known as the Business Plan Act (BPA), requires businesses using hazardous materials to prepare a hazardous materials business plan that describes their facilities, inventories, emergency response plans, and training programs. Disclosure of hazardous materials inventories is required. Under the BPA, hazardous materials are defined as raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste, although the health concerns pertaining to the release or inappropriate disposal of these materials are similar to those relating to hazardous waste. Department of Toxic Substances Control (DTSC) has the primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state.

Safe Drinking Water and Toxic Enforcement Act

The Safe Drinking Water and Toxic Enforcement Act (Proposition 65, Health & Safety Code Section 25249.5 et seq., 27 CCR Sections 25000 to 27001) has been in effect since 1986 to promote clean drinking water and keep toxic substances that cause cancer or birth defects out of consumer products. Proposition 65 prohibits persons within the course of doing business from knowingly discharging listed chemicals known to have these toxic characteristics into any source or of drinking water or onto land in which the material may come into contact with drinking water. Proposition 65 also requires businesses to warn any person exposed to chemicals known to cause cancer or reproductive toxicity. Furthermore, no persons within the course of doing business shall purposefully expose people to chemicals known to cause cancer or reproductive toxicity without clear and full disclosure.

Titles 14, 22, 23, and 27 of the California Code of Regulations (CCR)

Title 14 requires that gas storage fields be closely monitored by facility operators to ensure their safe operation and to establish that no damage to health, property, or natural resources occurs. Titles 22 and 23 of the CCR address hazardous materials and wastes. Title 22 defines, categorizes, and lists hazardous materials and wastes including universal wastes. Title 23 addresses public health and safety issues related to hazardous materials and wastes, and specifies disposal options. Title 27 of the CCR addresses landfill closure standards and landfill-related public health and safety issues.

California Underground Storage Tank Law

California law (Health & Safety Code Section 25280 et seq., 22 CCR Section 2630) requires a permit to operate a UST system that stores hazardous substances. Owners or operators of USTs must meet specific construction, design, and monitoring requirements, along with periodic testing and recordkeeping responsibilities.

California Government Code Section 65962.5

The Hazardous Waste and Substances Sites List, California Government Code Section 65962.5, requires the DTSC to compile and maintain a list of potentially contaminated sites located throughout California. Commonly referred to as the Cortese List, the list is a planning document used by the state, local agencies, and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites. DTSC is responsible for a portion of the information contained in the

Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's site mitigation and brownfields reuse program EnviroStor database provides DTSC's component of the Cortese List data by identifying Annual Workplan (now referred to State Response and/or Federal Superfund), and backlog sites listed under Health and Safety Code Section 25356.

Unified Program

Administration of the Unified Program (UP) is authorized by the Health and Safety Code. The UP is implemented at the local government level by agencies that have been certified by the Secretary of the California Environmental Protection Agency (CalEPA). The UP consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The state agencies responsible for these programs set the standards for their program while local governments implement those standards. The City of Los Angeles Fire Department (LAFD) is the designated Certified Unified Program Agency (or CUPA) that oversees the implementation of the UP in the area of the proposed Project.

California Occupational Safety and Health Act

Worker safety and health are also regulated by the California Occupational Safety and Health Act (CalOSHA, Labor Code Section 6300 et seq.). CalOSHA standards establish exposure limits for certain air contaminants. Exposure limits define the maximum amount of hazardous airborne chemicals to which an employee may be exposed over specific periods. When administrative or engineering controls cannot achieve compliance with exposure limits, protective equipment or other protective measures must be used. Employers are also required to provide a written health and safety program, worker training, emergency response training, and medical surveillance. CalOSHA implements and enforces the Injury and Illness Prevention Program per the regulatory requirements in Title 8, CCR Section 3203. These programs are facility specific and designed to protect workers and the public from health or safety hazards. The Hazard Communications Standard (29 CFR 1910.1200), enforced under CalOSHA, requires employers to provide employees with effective information and training on hazardous chemicals in their work area to the extent necessary to protect them in the event of a spill or leak of hazardous chemicals.

Hazardous Substance Account Act (HSAA)

The HSAA (Health & Safety Code Section 25300 et seq.) establishes a state Superfund program to clean up contaminated sites not listed on the National Priorities List (NPL). The HSAA authorizes the DTSC to initiate remedial and removal actions, and to enter into enforceable agreements with potentially responsible parties to investigate and remediate contamination.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) operates under the authority of the CalEPA with a mission to preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations. There are nine regional water quality control boards (RWQCBs) that develop and enforce water quality objectives and implementation plans that will best protect the beneficial uses of the State's waters. The RWQCBs develop "basin plans" for their hydrologic areas, govern requirements/issue waste discharge permits, take enforcement action against violators, and monitor water quality. The RWQCBs have the authority to require the remediation of sites where groundwater quality may be degraded by hazardous materials or substances releases from USTs or other sources. The Project site is within the jurisdiction of the Los Angeles RWQCB (Region 4). The Los Angeles RWQCB issued Order No. R4-2007-0019 which provides General Waste Discharge Requirements (WDRs) relative to the groundwater remediation at petroleum hydrocarbon fuel and/or volatile organic compound (VOC) impacted sites. The Order identifies a list of materials that can be used for in-situ remediation zone treatment purposes.

NPDES Construction General Permit

Pursuant to the Clean Water Act, the SWRCB issued a statewide General Construction Activity Permit (GCASP) for stormwater discharges associated with construction activities. Under this permit, construction activity that results in soil disturbances of at least 1 acre is required to obtain an individual NPDES permit or coverage under the GCASP. This requirement applies to both private and public agency construction projects, including projects undertaken at LAWA. Construction activities subject to this GCASP includes clearing, grading, and disturbances to the ground such as stockpiling or excavation. Compliance involves preparing and implementing a site-specific Stormwater Pollution Prevention Plan (SWPPP) to minimize pollution from construction activities. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of best management practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges.

Local

Los Angeles City Fire Code

The LAFD is the lead agency that regulates hazardous materials and issues permits for hazardous materials handling for the City of Los Angeles, and administers the applicable sections of the Los Angeles City Fire Code, including Chapter 50, Hazardous Materials – General Provisions. Those businesses that store hazardous waste or hazardous materials in the City of Los Angeles must submit a Certificate of Disclosure to the LAFD.

South Coast Air Quality Management District

Remediation of contamination has the potential to expose workers to hazardous materials or substances. The South Coast Air Quality Management District (SCAQMD) regulates emissions from soil remediation activities through Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil. This rule requires development and approval of a mitigation plan, monitoring of VOC concentrations, and implementation of the mitigation plan if VOC-contaminated soil is detected.

SQAQMD Rule 1403 specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The rule's requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and cleanup procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (ACWM).

The LAX Plan and Specific Plan

The LAX Plan,[1] an element of the City of Los Angeles General Plan, provides goals, objectives, policies, and programs that establish a framework for the development of facilities for movement and processing of passengers and cargo at LAX. The LAX Plan is intended to promote an arrangement of LAX uses that encourages and contributes to the modernization of LAX in an orderly and flexible manner within the context of the City of Los Angeles region. The LAX Specific Plan[2] is the zoning code which implements the LAX Plan.

Section 3.8 of the LAX Plan states that LAX will comply with local, state, and federal regulations and procedures for handling and storing hazardous materials generated at LAX such as motor oil, cleaning solvents, and wastes from spills and leaks.

As described below, past activities on and off the Airport have resulted in contamination of soil and groundwater by hazardous materials or substances in some limited areas. Releases of hazardous materials are subject to a complex set of reporting requirements, including notification to LAFD and the state Office of Emergency Services (OES). Remediation of contamination is subject to stringent oversight by federal, state, county, and/or city agencies, depending on the nature of contamination. There are no contaminated sites at or near LAX that are subject to federal oversight. The LAFD oversees contamination resulting from leaking USTs. The RWQCB has the authority to require the remediation of sites where groundwater quality may be degraded by hazardous materials or substances releases from USTs or other sources. These agencies require that remediation continue until regulatory requirements are met and closure is granted.

LAWA's Procedure for the Management of Contaminated Materials Encountered During Construction

LAWA prepared the *Procedure for the Management of Contaminated Materials Encountered During Construction* ("the Procedure") in 2005 for application to all LAX Master Plan projects.[3] The Procedure requires that preparation of detailed plans for handling previously unknown contaminated soil encountered during construction as well as spills of hazardous materials or substances that may occur during construction. It also requires the preparation of detailed health and safety and soils management plans, and includes provisions for testing and segregation of contaminated soils for proper disposal. While the Procedure focuses on previously unknown contaminated materials, its provisions for handling, storing, and disposing of contaminated materials also apply to contaminated materials that LAWA has already identified.

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1 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

2 City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

3 City of Los Angeles, Los Angeles World Airports, *LAX Master Plan Mitigation Monitoring & Reporting Program: Procedure for the Management of Contaminated Materials Encountered During Construction,* Revised December 2005.

4.6.1.3.2 Existing Conditions

The HMA study area consists of approximately 2,000 acres in Los Angeles, California. The study area is bounded by the Tom Bradley International Terminal (TBIT) in the Central Terminal Area (CTA) on the west; West Century Boulevard, West 106th Street, and Interstate 105 (I-105) on the south; Ocean Gate Avenue, South Ash Avenue, and I-405 on the east; and Westchester Parkway/West Arbor Vitae Street and Interceptor Street on the north. The study area extends across LAX property, Los Angeles County Metro facilities, private property, and various roadways. Current land uses in these areas include parking garages, surface parking lots, rental car facilities, hotels, Los Angeles County Metro facilities, residential areas, manufacturing facilities, and various roadways. The study area vicinity is highly developed and urbanized with passenger terminals, hotels, office buildings, parking lots, rental car facilities, light industrial facilities, highways, and former residential areas. Due to the size of the study area, the HMA discusses the area in four geographic subareas—Areas A, B, C, and D—identified below and shown on **Figure 4.6.1-1**.

- Area A is bounded to the north by Westchester Parkway; to the east by Jenny Avenue and Avion Drive; to the south by World Way and West Century Boulevard; and to the west by TBIT in the CTA.
- Area B is bounded to the north by Interceptor Street and West Arbor Vitae Street; to the east by Aviation Boulevard; to the south by West Century Boulevard; and to the west by Jenny Avenue and Avion Drive.
- Area C is bounded to the north by West Arbor Vitae Street; to the east by I-405, South Ash Avenue, and Ocean Gate Avenue; to the south by West 106th Street and West Century Boulevard; and to the west by Aviation Boulevard.
- Area D is bounded to the north by West 111th Street; to the east by various commercial facilities, and the ProLogis distribution center; to the south by Imperial Highway; and to the west by Aviation Boulevard.

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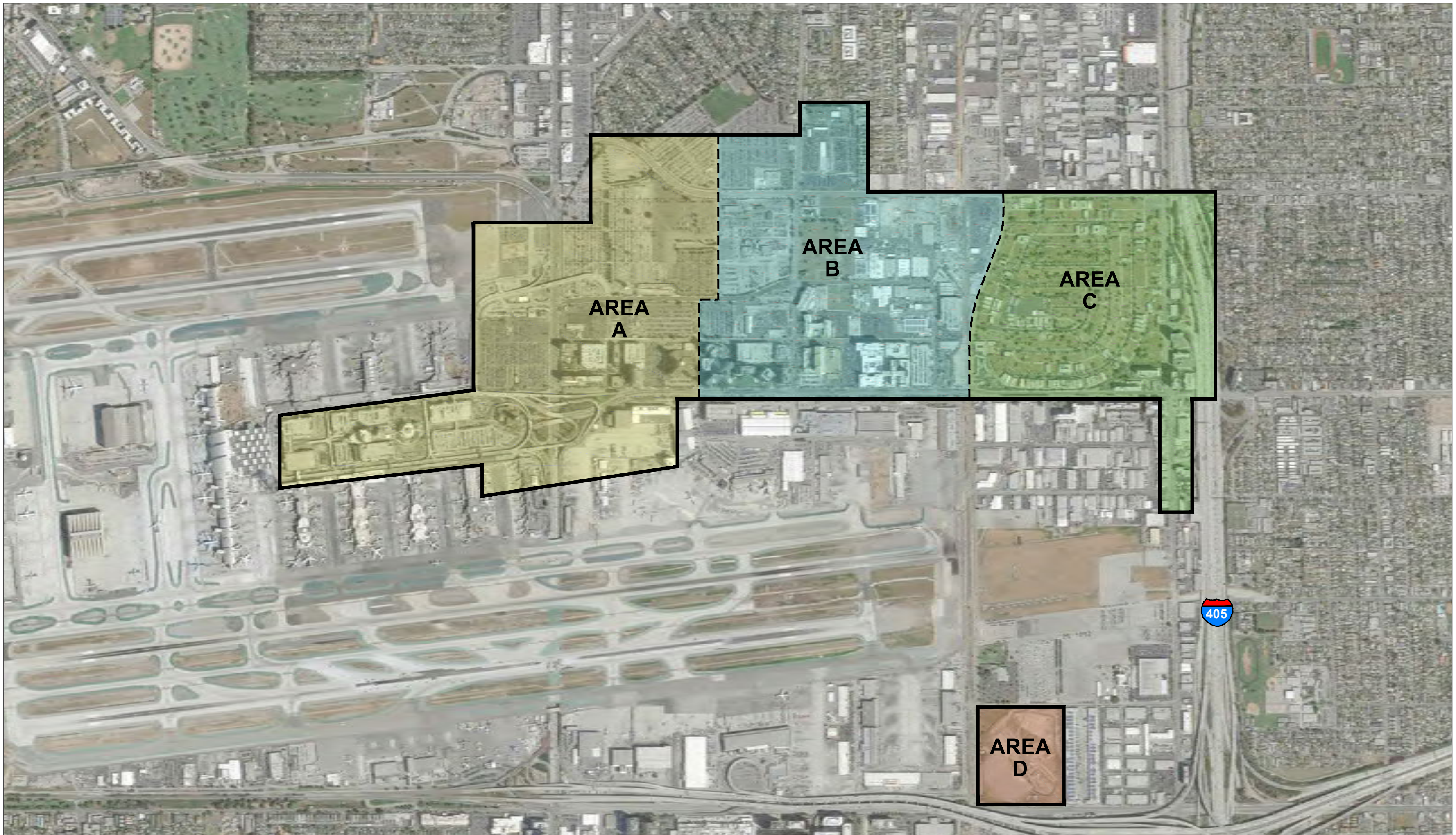

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.
SOURCE: Ninyo & Moore, October 2015; Google Earth Imagery, 2015.
PREPARED BY: Meridian Consultants, Inc., August 2015.

Figure 4.6.1-1

NORTH 0 2,000 ft.

Hazardous Materials Assessment Study Area

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Known Hazardous Materials

Various soil and groundwater remediation techniques that are typically required by the RWQCB are currently in operation at LAX and within the acquisition areas. The techniques include *ex situ* remediation (soil is excavated and either treated or disposed of at a licensed landfill) and *in situ* remediation (soil is treated in place by bioremediation, vapor extraction, or other types of methods). Specific sites at LAX also have product recovery systems in groundwater wells to remove petroleum hydrocarbon free product from the groundwater.

Based on the HMA, which included historical research, a review of the environmental database, regulatory agency inquiries, and a site reconnaissance, the study area contains 15 specific properties of concern near the Project, presented in **Table 4.6.1-1**. The locations of each of these properties are shown on **Figure 4.6.1-2**. Properties of concern are those that were evaluated and classified as having high or moderate potential for detrimental impacts during construction activities for the Project. Properties categorized as high or moderate risk were evaluated based on the information obtained and the likelihood that hazardous materials might impact soil and/or groundwater likely to be disturbed during construction. Hazardous Materials Impacts (HMIs) were identified in the HMA to categorize types of potential impacts that could occur within the specific properties of concern at the sites containing the proposed Project components. The HMIs identified in Table 4.6.1-1 are defined below:

- HMI-1: Demolition of structures built prior to 1980 may result in the exposure of the public and/or the environment to ACMs and/or lead-based paint (LBP).
- HMI-2: Construction activities may encounter previously unidentified USTs, hazardous materials, petroleum hydrocarbons, or hazardous or solid wastes and may result in the exposure of the public and/or the environment to hazardous materials.
- HMI-3: Construction activities, including demolition, may encounter or generate hazardous or solid wastes and debris and may result in the exposure of the public and/or the environment to hazardous materials.
- HMI-4: Construction activities may result in exposure of the public and/or the environment to contaminated soil at the specified properties listed in Table 4.6.1-1.

Table 4.6.1-1 (1 of 2): Known Hazardous Materials Sites of Concern)

MAP ID NO.	PROPERTY NAME/ ADDRESS	SITE OPERATIONS [1/]	DATA SOURCE [2/]	RISK CLASS [3/]	APPLICABLE HMI	APPROXIMATE PROJECT COMPONENTS
	Area A[6/]					
1	Allied Aviation Service Co. facility 6501 West 96th St.	Fuel storage: listed on the LUST database; unauthorized release affecting soil and groundwater	D	H	2,3,4	Roadway Improvements
	Area B					
2	Allied-Signal Inc./Park One/ Honeywell International Inc. 9851 South Sepulveda Blvd. [4/]	Former aerospace manufacturer: TPH and VOCs affecting groundwater; USTs; SVE system; Listed on the SLIC and LUST databases	D, R	H	2,3,4	Automated People Mover (APM), Pedestrian Walkway, CONRAC, Roadway Improvements, Enabling Projects
3	King Delivery, Inc. 5600 West Arbor Vitae St.	Fuel storage: listed on the LUST database; USTs	D, R	M	2,3,4	Roadway Improvements
4	National Car Sales 9200 Airport Blvd.	Fuel storage: listed on the LUST database; USTs	D, R	M	2,3,4	APM Maintenance and Storage Facility, Roadway Improvements
5	National Car Rental 9419 Airport Blvd.	Fuel storage: listed on the LUST database; USTs	D, R	M	2,3,4	Intermodal Transportation Facility (ITF) West, APM, Roadway Improvements, Potential Future Related Development
6	Budget Rent-A-Car 9775 Airport Blvd.	Fuel storage: listed on the LUST database; USTs; unauthorized release affecting soil and groundwater	D, R	H	2,3,4	Roadway Improvements
7	Hertz Corporation/Honeywell International 9225 Aviation Road	Former aerospace manufacturer: USTs; clarifiers; degreasers	D, R	H	1,2,3,4	APM, ITF East, Roadway Improvements
8	Union Bank/Estate of Joseph Collins 9007–9121 Aviation Blvd.	Former metal treating facility: unauthorized release of TPH and VOCs affecting soil and groundwater	D	H	1,2,3,4	Roadway Improvements
9	Princeland Property 1237 West Arbor Vitae	Former degreasing operations, plastic extrusion, and furniture distribution facility: elevated levels of VOCs in soil and groundwater	D	H	1,2,3,4	Roadway Improvements

Table 4.6.1-1 (2 of 2): Known Hazardous Materials Sites of Concern

MAP ID NO.	PROPERTY NAME/ ADDRESS	SITE OPERATIONS 1/	DATA SOURCE 2/	RISK CLASS 3/	APPLICABLE HMI	APPROXIMATE PROJECT COMPONENTS
	Area C					
2	Allied-Signal Inc./Park One/ Honeywell International Inc. 9851 South Sepulveda Blvd. 4/	Former aerospace manufacturer: TPH and VOCs affecting groundwater; USTs; SVE system; Listed on the SLIC and LUST databases	D, R	H	2,3,4	APM, Pedestrian Walkway, CONRAC, Roadway Improvements, Enabling Projects
10	Tetra Graphics Site 10310 Glasgow 5/	Former aircraft manufacturer: unauthorized release of VOCs in groundwater and soil vapor	D, R	H	1,2,3,4	None
11	Thrifty Car Rental 5440 West Century Blvd. 5/	Unauthorized release of aviation fuel affecting soil and groundwater	D, R	H	1,2,3,4	None
12	Fan Steel/Precision Sheet Metal 5235 West 104th St. 5/	Unauthorized release of VOCs in groundwater and soil vapor	D	H	2,3,4	None
13	Dollar Car Rental 9150 Aviation Blvd.	ASTs	R	M	2,3,4	Roadway Improvements
14	Pro-Tech Design MFG 5220 West 104th St. 5/	Drycleaner	D	M	2,3,4	None
	Area D					
15	Los Angeles Department of Water and Power Distribution Station No. 47	Electrical transformers used at distribution facility since at least 1938	R, H	H	1,2,3,4	Roadway Improvements

NOTES:
ASTs = Above ground Storage Tanks
Blvd. = Boulevard
LUST = Leaking Underground Storage Tank
SLIC = Spills, Leaks, Investigations, and Cleanups Program
St. = Street
SVE = Soil Vapor Extraction
TPH = Total Petroleum Hydrocarbon
USTs = Underground Storage Tanks
VOC = Volatile Organic Compound

1/ Description of site operations/primary reasons for risk class
2/ Indicates primary information sources for listing: R = Reconnaissance, D = Database, H = Historical Documentation
3/ Risk Class: H = high, M = moderate
4/ Property previously identified in the October 2015 HMA report to be a property of concern for Area A. Subsequent review by Ninyo & Moore in the June 2016 HMA Addendum Letter identifies the property to be a property of concern for Areas B and C.
5/ Property not located within Project site boundary. However, property is evaluated based on its likelihood to impact soil and/or groundwater during construction of proposed Project components.
6/ Contamination (TPH) in the jet fuel range and VOCs have been detected in the soil and groundwater beneath the hydrant fuel system to the north/northwest end of the Terminal 2 concourse. Portions of the groundwater plumes appear to be defined; however, additional assessment, including the installation and monitoring of three additional groundwater wells, is necessary. Further characterization of the site to identify the vertical and lateral extent of soil contamination and lateral extent of groundwater contamination is underway by LAWA under the Los Angeles RWQCB oversight. As the known extent of contamination is not located within, and is substantially north of, Area A (including the APM alignment), the risk class is low.

SOURCE: Ninyo & Moore, H*azardous Materials Assessment, Landside Access Modernization Program, Los Angeles International Airport, Los Angeles, California,* October 14, 2015; Ninyo & Moore, *Addendum Letter–Hazardous Materials Assessment, Landside Access Modernization Program, Los Angeles International Airport, Los Angeles, California*, June 29, 2016; Alta Environmental, *Workplan for Additional Groundwater Investigation, Terminal 2 Fuel Hydrant Facility, 250 North World Way, Los Angeles International Airport*, July 7, 2015, Available: http://geotracker.waterboards.ca.gov/view_documents.asp?global_id=T10000004322&document_id=5859621.

PREPARED BY: Ricondo & Associates, Inc., October 2015.

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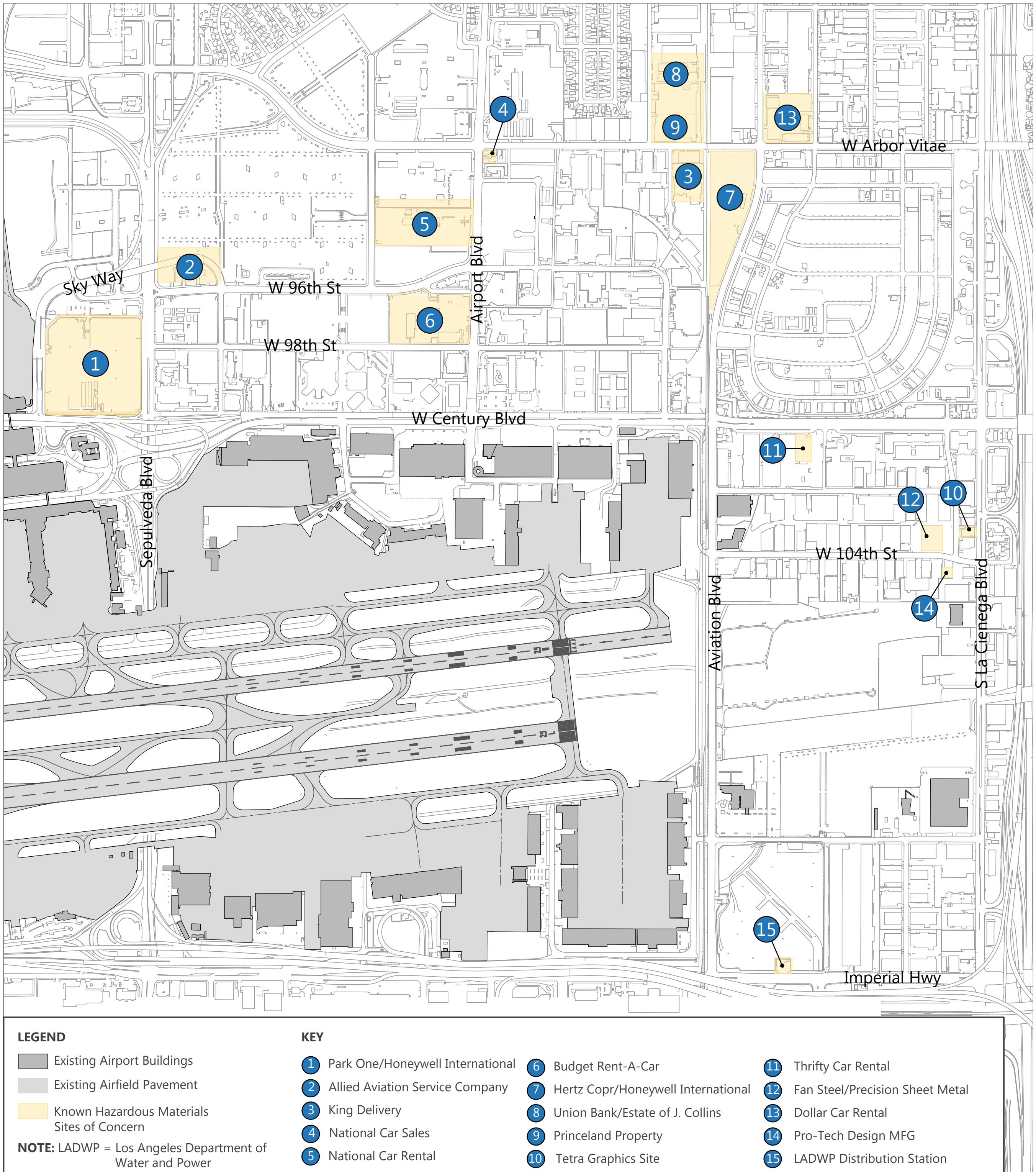

SOURCE: Ninyo & Moore, October 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.6.1-2

NORTH 0 1,400 ft.

Known Hazardous Materials Sites of Concern

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Nonspecific Areas of Concern

In addition to the specific properties of concern, the HMA identified nonspecific concerns within the proposed Project vicinity. These concerns include industrial-type operations that occurred in the noted areas over several decades.

- Area A: varied historical industrial uses, including aircraft manufacturers, a die-casting shop, gas and oil stations, auto repair shops, factory buildings, machine shops, and parts storage
- Area B: varied historical industrial uses, including aircraft hangars and maintenance, factories, a machine shop, a chrome furniture manufacturer, a sheet metal shop, various aircraft parts manufacturers, cosmetics laboratories, and electronics manufacturers
- Area C: varied historical industrial uses, including aircraft hangars and maintenance, paint shops, electronic assemblies, processing plants, sheet metal shops, and machine shops
- Area D: varied historical uses, including an auto repair shop, missile fuel testing area, recycling yard, one 10,000-gallon gasoline UST present from at least 1950 through 1969 (northern portion), and an electrical station

As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, groundwater occurs beneath LAX, at approximately 100 feet below the ground surface, within what is known as the West Coast Groundwater Basin. Water levels are highest along the West Coast Basin seawater intrusion barrier, and decrease to the east where they are at their lowest elevation in the City of Gardena between the Charnock fault and Newport-Inglewood Uplift, both of which are geologic structural features that partially restrict groundwater flow.[4] The central and western portions of the Project site have a groundwater depth of approximately 88 to 100 feet deep; the eastern portion of the Project site, adjacent to the I-405, has a groundwater depth of approximately 55 to 88 feet below the ground surface.[5] Overall, the groundwater in the West Coast Groundwater Basin is considered to be of high quality, suitable for potable and nonpotable uses.[6] However, there are localized areas of marginal to poor water quality that can be attributed to natural or human causes.[7]

4.6.1.4 Thresholds of Significance

A significant hazardous materials impact would occur if the proposed Project would result in one or more of the following conditions:

- An unauthorized and uncontrolled release of a hazardous material that created a hazard to the public or the environment.

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4 Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

5 Ninyo & Moore, *Preliminary Geotechnical Evaluation Pile Foundations, Landside Access Modernization Program, Los Angeles International Airport, Los Angeles, California*, January 29, 2016.

6 Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

7 Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

- Exposure of workers to hazardous materials in excess of OSHA and CalOSHA permissible exposure limits.
- Hazardous emissions or handling of hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.
- Contamination of soil or groundwater due to a spill or release, or prevention of cleanup of sites that are currently undergoing soil or groundwater remediation.

The above thresholds are consistent with the *L.A. CEQA Thresholds Guide*.[8]

4.6.1.5 Impact Analysis

4.6.1.5.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both the Phase 1 and Phase 2 Project elements. Impacts of the Phase 2 program features (potential future related development) are discussed separately.

Unauthorized and Uncontrolled Release of a Hazardous Material

Methane & Radon

The proposed Project would require grading where development would occur and excavation for building foundations and for APM footings up to 100 feet below ground surface (bgs). Additionally, the proposed Project would include construction of subterranean elements such as underground utility vaults and lines. However, none of the areas within the Project site are located in a City of Los Angeles Methane Hazard or Methane Hazard Buffer zone, which are areas where the potential for methane gas to be present at hazardous concentrations in the subsurface is elevated, compared to other areas of the City.[9] Additionally, according to the Radon Potential Zone Map for Southern Los Angeles County, California,[10] the Project site is not located within a radon zone. Impacts associated with the potential for an unauthorized or uncontrolled release of a hazardous material would be less than significant.

Asbestos-Containing Materials and Lead-Based Paint

Asbestos is a crumbly material often found in older buildings, typically used as insulation in walls or ceilings. It was formerly popular as an insulating material because it had the desirable characteristic of being fire resistant. However, it can pose a health risk when very small particles become airborne. These dustlike particles can be inhaled, and their microscopically sharp structures can puncture tiny air sacs in the lungs,

8 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

9 City of Los Angeles, Bureau of Engineering, Department of Public Works, GIS Mapping, *Methane and Methane Buffer Zones*, March 31, 2004.

10 California Geologic Survey, *Radon Potential Zone Map for Southern Los Angeles County, California,* prepared by Ron Churchill, Available: http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/radon/Documents/SR182Map.pdf, January 2005.

resulting in long-term health problems. The DTSC classifies asbestos waste as potentially hazardous if it is greater than 1 percent of total volume and easily crumbled (friable).

Lead-based paint (LBP) was commonly used on interior and exterior surfaces of buildings built prior to 1978. Disturbances of buildings containing LBP may result in the exposure of paint dust particles which can affect air quality. Exposure to residual lead can cause severe adverse health effects.

Based on the age of some on-site buildings (built prior to 1980), there is a potential for the exposure of ACMs and LBP on the Project site. As shown in Table 4.6.1-1, there are six known hazardous materials sites in Areas B, C, and Area D that may result in the exposure of ACMs and LBP during the construction of the APM guideway, the ITF East, and various roadway improvements.

In accordance with LAWA standard practices for development projects at LAX and with City requirements, prior to the issuance of any permit for the demolition of alteration of any existing structure(s), LAWA would provide a letter to the Los Angeles Department of Building and Safety from a qualified asbestos abatement consultant indicating that no ACMs are present in the building. If ACMs are found to be present, they would be abated in compliance with SCAQMD Rule 1403 as well as all other applicable state and federal rules and regulations regarding the handling and disposal of hazardous materials identified and described in Section 4.6.1.3. In addition, prior to issuance of any permit for the demolition or alteration of any existing structure(s), a LBP survey would be performed following protocols of the Los Angeles Department of Building and Safety designed to detect all LBP. Should LBP materials be identified, standard handling and disposal practices would be implemented pursuant to OSHA and CalOSHA regulations to limit worker and environmental risks. Therefore, impacts related to the potential for unauthorized or uncontrolled release of a hazardous material would be less than significant.

Contaminated Soils and Groundwater

Construction of the proposed Project would require grading, excavation, and demolition of existing infrastructure (such as existing pavement and utility lines), parking garages, buildings, a hangar complex, and the LAX City Bus Center, as illustrated in Figure 2-44 and discussed in Chapter 2, *Description of the Proposed Project*. Excavation for the ITFs and the Consolidated Rental Car Facility (CONRAC) foundations and for APM concrete shaft foundations would occur at depths up to 100 feet bgs.

As discussed in Section 4.6.1.3.2, groundwater in the West Coast Groundwater Basin is considered to be of high quality.[11] However, as there are localized areas of marginal to poor water quality within the Basin, contaminated groundwater could be encountered during foundation excavation for the proposed Project.

As shown in Table 4.6.1-1, there are 15 known hazardous materials sites in Areas A, B, C, and Area D that may result in the exposure of hazardous waste or contaminated soils during construction of the proposed Project. Based on the depth of groundwater at the Project site, which ranges from approximately 55 to 100 feet bgs,

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[11] Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

the construction of the proposed Project may encounter contaminated soils or groundwater. When soil excavation occurs and pavement is removed, exposed soils could indicate the need for additional soil sampling. Any such sampling and associated remediation would be carried out in accordance with RWQCB Order No. R4-2007-0019, which provides a list of materials that can be used for *in-situ* remediation zone treatment purposes. In the event that Project-related excavation unexpectedly encounters VOC-contaminated soil, the continuation of such excavation would be carried out in accordance with SCAQMD Rule 1166. All excavation, grading, and demolition associated with the proposed Project construction would be conducted in compliance with local, state, and federal regulations regarding management and disposal of contaminated soils identified and described in Section 4.6.1.3. Compliance with such regulations would reduce accidental release of hazardous materials risks to levels acceptable to regulatory agencies. Additionally, any hazardous materials/wastes uncovered by construction activities would be removed and managed, and areas would be remediated per other applicable regulations described and identified in Section 4.6.1.3, such that impacts would be reduced to levels acceptable to federal, state, and local regulatory agencies.

The proposed Project would comply with all applicable local, state, and federal regulations, such as RWQCB Order No. R4-2007-0019 and SCAQMD Rule 1166, to avoid potential significant hazards to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous soils or groundwater to the environment. Therefore, impacts related to an unauthorized and uncontrolled release of hazardous materials would be less than significant.

Exposure of Workers to Hazardous Materials

Project components that pose the potential for construction workers to encounter contamination during construction include the ITF West, APM Maintenance and Storage Facility (MSF), ITF East, CONRAC, roadway removal, and new and redesigned roadways because they would entail major excavation in areas of known or potential soil and/or groundwater contamination. In addition, it is possible that during other construction activities for implementation of the Project, such as excavation for the CONRAC, previously unidentified soil and/or perched groundwater contamination could be encountered.

Exposure of construction workers to contaminated materials would be minimized by implementing the measures required by OSHA 29 CFR Section 1926.65, Appendix C and CalOSHA standards under Title 8, CCR Section 3203 and 29 CFR 1910.1200. Compliance with these regulations would establish exposure limits for workers, require protective equipment or other protective measures when warranted, and require employers to provide a written health and safety program, worker training, emergency response training, and medical surveillance. Compliance would ensure that construction workers are appropriately trained for the identification of contaminated soils and that contaminated materials encountered or generated during construction are properly stored, remediated, and disposed of. Impacts associated with exposure of construction workers to hazardous materials in excess of OSHA and CalOSHA permissible exposure limits would be less than significant.

Hazardous Emissions or Handling of Hazardous or Acutely Hazardous Materials, Substances, or Waste within One-Quarter Mile of a School

Construction of the proposed Project would involve hazardous materials typical to construction, including gasoline, motor oils, and other similar materials. Acutely hazardous materials[12] may be used in limited quantities during construction of the proposed Project. All potentially hazardous construction materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations described in Section 4.6.1.3. Any risk associated with transport, use, or disposal of these materials would be minimized to less than significant levels through compliance with these standards and regulations. Emissions from such materials would be minimal and localized to the Project site.

The Project site does contain known contamination or hazardous materials sites, as illustrated in Figure 4.6.1-2. As discussed in Section 4.11, *Public Services*, the two schools located within one-quarter mile of these sites, the Stella Middle Charter Academy and the Bright Star Secondary Charter Academy, both located at 5431 W. 98th Street, it is LAWA's intent that they would be relocated prior to Project construction. However, if the schools have not been relocated when columns for the APM guideway need to be erected, construction may occur within one-quarter mile of these schools. Construction activities would be limited to the APM columns, which would involve no or limited amounts of acutely hazardous material. Construction contractors would be required to handle, store, and use any hazardous construction materials in accordance with manufacturers' instructions and in compliance with the applicable standards and regulations described in Section 4.6.1.3. No other schools are located or proposed within one-quarter of a mile of the Project site. Impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would be less than significant.

Contamination of Soil or Groundwater Due to a Spill or Release, or Prevention of Cleanup of Sites That Are Undergoing Remediation

Construction

Contamination of Soil or Groundwater Due to a Spill or Release

With implementation of the proposed Project, an increase in hazardous materials use and hazardous waste generation during routine fueling and maintenance during construction would increase the chances of a spill or release of substances that could result in contamination of soil or groundwater. As discussed in Section 4.6.1.3, the handling and storage of hazardous substances are stringently regulated, as are releases of hazardous materials, including emergency response and cleanup requirements. Additionally, LAWA's *Procedure for the Management of Contaminated Materials Encountered During Construction* would ensure specific procedures for handling hazardous materials, identifying risks and monitoring site conditions, and implementing BMPs and spill prevention and control measures to prevent spills, as well as emergency response procedures and notification requirements in the event of a spill, are adhered to. Compliance with applicable regulations described in Section 4.6.1.3 would ensure that spills and releases would not create a

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12 8 CCR Appendix A, 8 CA ADC Appendix A to Section 5189 - List of Acutely Hazardous Chemicals, Toxics and Reactives (Mandatory).

hazard to the public or the environment, and would not result in the potential contamination of soil or groundwater. Therefore, impacts associated with contamination of soil or groundwater due to spill or release would be less than significant.

Impacts to Cleanup of Sites That Are Undergoing Remediation

Roadway improvements may interfere with ongoing remediation at the Allied-Signal/Park One/Honeywell site and the Budget Rent-A-Car site (Map Identification Numbers 2 and 6 in Figure 4.6.1-2), if the remediation is still in operation at the time the proposed Project is constructed. Additionally, construction of the ITF West may interfere with ongoing remediation at the National Car Rental site. Several other sites of concern have the regulatory status of "open—site assessment" and may require remediation in the future. Construction of the APM MSF may interfere with remediation at the National Car Sales site, if remediation is required and remediation is still in operation at the time the facility is constructed. If construction of the proposed Project were to interfere with existing or planned remediation activities at any of these sites, LAWA would coordinate with the responsible parties to identify potential alternative sites for locating groundwater monitoring wells, injection wells, or other similar facilities required to implement remediation. If no alternative sites are suitable to conduct the required remediation activities, LAWA would need to either find a way to expedite the remediation activities or work with the relevant regulatory agencies to determine options for allowing construction while achieving the objectives of the required remediation. Because the proposed Project has the potential to interfere with the cleanup of sites undergoing remediation, the impact would be significant.

Operations

Operation of the proposed Project would include transportation and airport-related support uses typical of the surrounding area. The types and amounts of hazardous materials associated with routine, day-to-day operation of transportation and airport-related uses would include typical cleaning chemicals, vehicle fuel, oils, and lubricants, building maintenance materials and chemicals, and landscaping materials and chemicals.

Operation of the ITF East and ITF West would be consistent with a ground transportation system consisting of private vehicles, buses, and shuttles. Hazardous materials that would occur within the ITF sites would include fuels and other petroleum-based substances associated with vehicle operations. Components of the APM system include the APM MSF and three to four traction power substations. In order to support the operations and maintenance of the APM operating system, limited quantities of hazardous materials, such as oils, lubricants, paints, and other petroleum-based substances would be used within the APM MSF. The traction power substations would house equipment such as transformers, rectifiers, cabling, and switchgear. The use and storage of these hazardous materials and equipment would be in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Operation of the CONRAC would involve the use and storage of hazardous materials, such as oils, lubricants, paints, and other petroleum-based substances. The CONRAC would also consist of facilities for multi-level fueling, washing, and vehicle maintenance, which would include approximately 60 fuel nozzles per floor, for an estimated total of 180 fuel fueling positions and nozzles. A further description of the CONRAC's proposed indoor fueling operations is described in Section 4.11, *Public Services*.

With implementation of the proposed Project, an increase in hazardous materials use and hazardous waste generation during routine fueling and maintenance of ground transportation vehicles, including private vehicles, buses, and shuttles, and the APM, would increase the chances of a spill or release of substances that could result in contamination of soil or groundwater. As discussed in Section 4.6.1.3, the handling and storage of hazardous substances are stringently regulated, as are releases of hazardous materials, including emergency response and cleanup requirements. Compliance with applicable regulations described in Section 4.6.1.3. would ensure that spills and releases would not create a hazard to the public or the environment, and would not result in contamination of soil or groundwater. Impacts associated with contamination of soil or groundwater due to spill or release would be less than significant.

4.6.1.5.2 LAX Landside Access Modernization Program Potential Future Related Development

After construction of the Project-level components, parcels that were needed for construction laydown and staging areas may be subject to potential future related development, as illustrated in Figure 2-51 in Chapter 2, *Description of the Proposed Project*. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. For the purpose of this EIR, impacts related to potential future related development are evaluated at a programmatic level. Anticipated uses would include commercial development and/or airport-related support. Potential future related development would be guided by land use designations and design guidelines that have been developed in Section 4.7, *Land Use and Planning*. Any construction and operational uses would conform to applicable regulations described and identified in Section 4.6.1.3 related to hazardous materials. A further discussion of the impacts resulting from the Potential Future Related Development is discussed below.

Unauthorized and Uncontrolled Release of a Hazardous Material

<u>Methane & Radon</u>

Potential future related development projects would require grading where development would occur and excavation for building foundations and possibly subterranean elements, such as underground utility vaults and lines. However, none of the areas of potential future related development are located in a City of Los Angeles Methane Hazard or Methane Hazard Buffer zone, which are areas where the potential for methane gas to be present at hazardous concentrations in the subsurface is elevated compared to other surrounding areas.[13] Additionally, according to the Radon Potential Zone Map for Southern Los Angeles County, California,[14] the areas of potential future related development are not located within a radon zone. Impacts associated with the potential for an unauthorized or uncontrolled release of hazardous materials would be less than significant.

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13 City of Los Angeles, Bureau of Engineering, Department of Public Works, GIS Mapping, *Methane and Methane Buffer Zones*, March 31, 2004.

14 California Geologic Survey, *Radon Potential Zone Map for Southern Los Angeles County, California,* prepared by Ron Churchill, Available: http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/radon/ Documents/SR182Map.pdf, January 2005.

Asbestos-Containing Materials and Lead-Based Paint

As discussed previously, asbestos is a crumbly material often found in older buildings and was used as an insulating material because it had the desirable characteristic of being fire resistant. However, it can pose a health risk when very small particles become airborne, which can occur during building demolition or alteration. LBP was commonly used on interior and exterior surfaces of buildings built prior to 1978. Disturbances of buildings containing LBP may result in the exposure of paint dust particles which can affect air quality. Exposure to residual lead can cause severe adverse health effects.

As part of the proposed Project, any existing buildings from areas of potential future related development would be removed because these areas would be used for construction staging and lay-down areas during Project implementation. The demolition of these existing buildings would comply with all applicable state and federal rules and regulations to ensure proper abatement of ACMs, including SCAQMD Rule 1403, which specifies work practice requirements to limit asbestos emissions from building demolition activities, including the handling and disposal of ACMs. Standard handling and disposal practices of LBP would be implemented pursuant to OSHA and CalOSHA regulations to limit worker and environmental risks from air contaminants. As such, no buildings would be present on these sites at such time that potential future related development projects are proposed. Therefore, potential future related development projects would not involve the demolition or alteration of buildings that may contain ACMs or LBP, and there would be no potential unauthorized or uncontrolled release of ACMs or LBP. Impacts associated with the potential for unauthorized or uncontrolled release of hazardous materials would be less than significant.

Contaminated Soils and Groundwater

Potential future related development projects would require grading where development would occur and excavation for building foundations and possibly subterranean elements, such as underground utility vaults and lines. As such, there would be potential for exposure of hazardous waste or contaminated soils during construction of the potential future related development. The potential future related development would comply with all applicable local, state, and federal regulations, such as RWQCB Order No. R4-2007-0019 and SCAQMD Rule 1166, to avoid potential significant hazards to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous soils or groundwater to the environment. Therefore, impacts related to an unauthorized and uncontrolled release of hazardous materials would be less than significant.

Exposure of Workers to Hazardous Materials

It is possible that potential future related development projects could involve major excavation in areas of known soil and/or groundwater contamination. In addition, it is possible that during other construction activities for implementation of the proposed Project, previously unidentified soil and/or perched groundwater contamination could be encountered. Exposure of construction workers to contaminated materials would be minimized by implementing the measures required by OSHA 29 CFR Section 1926.65, Appendix C and CalOSHA standards under Title 8, CCR Section 3203 and 29 CFR 1910.1200. Compliance with these regulations would establish exposure limits for workers, require protective equipment or other protective measures when warranted, and require employers to provide a written health and safety program, worker training, emergency response training, and medical surveillance. Compliance would ensure that construction workers are appropriately trained for the identification of contaminated soils and that contaminated materials encountered or generated during construction are properly stored, remediated, and disposed of. Impacts associated with exposure of construction workers to hazardous materials in excess of OSHA and CalOSHA permissible exposure limits would be less than significant.

Handling of Acutely Hazardous Materials within One-Quarter Mile of a School

Two schools are currently located within one-quarter mile of the areas of potential future related development, the Stella Middle Charter Academy and the Bright Star Secondary Charter Academy, both located at 5431 W. 98th Street. As discussed above, these schools would be relocated prior to Project construction. No other schools are located or proposed within one-quarter mile of the areas of potential future related development. Impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would be less than significant.

Contamination of Soil or Groundwater Due to a Spill or Release, or Prevention of Cleanup of Sites That Are Undergoing Remediation

Contamination of Soil or Groundwater Due to a Spill or Release

Construction of potential future related development projects have the potential to increase the chances of a spill or release of substances that could result in contamination of soil or groundwater. Construction activities may involve the use of hazardous materials, which may include fuels, lubricants, coatings, and grease related to construction equipment and activities. However, hazardous materials would be used in accordance with regulatory standards and protocols described in Section 4.6.1.3, and therefore would not be in such quantities or stored in such a manner as to pose significant safety hazards.

Operation of the potential future related development would consist of commercial and airport-support related uses typical of the surrounding area. The potential future related development would include the use of small amounts of cleaning and related materials would be categorized as potentially hazardous materials. These materials would be stored on site in small quantities with the purpose of cleaning and maintaining operations of the development. The limited use of various pesticides and fertilizers could be permitted for landscaping maintenance on project sites. The use, storage, transport, and disposal of these potential hazardous materials by staff would be required to comply with the regulations described in Section 4.6.1.3, as administered by several agencies, including the DTSC, USEPA, OSHA, LAFD, Los Angeles Police Department (LAPD), Department of Public Works, and Caltrans. Additionally, LAWA's *Procedure for the Management of Contaminated Materials Encountered During Construction* would ensure specific procedures for handling hazardous materials, identifying risks and monitoring site conditions, and implementing BMPs and spill prevention and control measures to prevent spills, as well as emergency response procedures and notification requirements in the event of a spill, are adhered to. Impacts associated with contamination of soil or groundwater due to spill or release would be less than significant.

Impacts to Cleanup of Sites That Are Undergoing Remediation

Potential future related development may interfere with ongoing remediation at the National Car Rental site and the Budget Rent-A-Car site, if the remediation is still in operation at the time of construction of future related development projects. If remediation is still ongoing at these sites when the potential future related development projects are constructed, cessation of remediation at these sites may be required during construction. If construction of the proposed Project were to interfere with existing or planned remediation activities at any of these sites, LAWA would coordinate with the responsible parties to identify potential alternative sites for locating groundwater monitoring wells, injection wells, or other similar facilities required to implement remediation. If no alternative sites are suitable to conduct the required remediation activities, LAWA would need to either find a way to expedite the remediation activities or work with the relevant regulatory agencies to determine options for allowing construction while achieving the objectives of the required remediation. Because the proposed Project has the potential to interfere with the cleanup of sites undergoing remediation, the impact would be significant.

4.6.1.6 Cumulative Impacts

Hazardous materials and wastes are generated by many potential sources and actions. Additionally, hazardous materials that are currently no longer in use were once used in the construction of buildings located on the Project site. Similar to the Project site, the sites of the cumulative projects identified in Section 3.4, *Development Setting*, may have environmental contamination associated with the past uses of those properties.

Hazardous materials impacts are generally site specific, and new or redevelopment projects do not generally interact with cumulative projects to produce cumulative effects. During construction of the proposed Project, limited quantities of miscellaneous hazardous substances would be brought onto the Project site. In addition, construction may require remediation of hazardous materials. However, these materials would be limited and isolated, and would not interact with other related projects. If related projects are constructed concurrently with the proposed Project, cumulative impacts could occur. These include offsite spills related to transportation of hazardous materials, and simultaneous contamination of the same groundwater basin from spills or releases at different construction sites.

Due to the generally localized nature of potential hazards and hazardous materials impacts, impacts from multiple related development projects in the adjacent geographical areas would not be additive and would not result in significant cumulative impacts. In addition, because of compliance with state and federal regulations for the transport, use, or disposal of hazardous materials and hazardous waste identified and described in Section 4.6.1.3, the increase in the potential exposure to public health from hazardous materials and hazardous waste would not be substantially increased with cumulative development. Future projects in all adjacent jurisdictions would be subject to these regulations. Cumulative impacts associated with hazardous materials and hazardous waste would be less than significant.

4.6.1.7 Mitigation Measures

As indicated in Section 4.6.1.5, impacts related to the potential for the proposed Project to conflict with ongoing remediation efforts would be significant. The following Standard Control Measures are proposed as mitigation measures to reduce significant impacts related to conflicts with ongoing remediation efforts.

- **LAX-HM-1. Ensure Continued Implementation of Existing Remediation Efforts Affected by Onsite Construction.** Prior to initiating construction, LAWA will conduct a pre-construction evaluation to determine if the proposed construction will interfere with existing soil or groundwater remediation efforts. For sites currently on LAX property, LAWA will work with tenants to ensure that, to the extent possible, remediation is complete prior to the construction. If remediation must be interrupted to allow for project construction, LAWA will notify and obtain approval from the regulatory agency with jurisdiction, as required, and will evaluate whether new or increased monitoring will be necessary. If it is determined that contamination has migrated during construction, temporary measures will be taken to stop the migration. As soon as practicable following completion of construction in the area, remediation will be reinstated, if required by the RWQCB or another agency with jurisdiction. In such cases, LAWA will coordinate the design of the project and the re-design of the remediation systems to ensure that they are compatible and to ensure that the proposed remediation system is comparable to the system originally in place. If it is determined during the pre-construction evaluation that construction will preclude reinstatement of the remediation program, LAWA will obtain approval to initiate construction from the agency with jurisdiction.
- **LAX-HM-2. Ensure Continued Implementation of Existing Remediation Efforts on Parcels Subject to Acquisition.** For properties to be acquired, LAWA will evaluate the status of all existing soil and groundwater remediation efforts. As part of this evaluation, LAWA will assess the projected time required to complete the remediation activities and will coordinate with the land owner and the agency with jurisdiction to ensure that remediation is completed prior to scheduled demolition and construction activities, if possible. In cases where remediation cannot be completed prior to demolition and construction activities, LAWA will notify and obtain approval from the regulatory agency with jurisdiction, as required, and will evaluate whether new or increased monitoring will be necessary. If it is determined that contamination has migrated during construction, temporary measures will be taken to stop the migration. As soon as practicable following completion of construction in the area, remediation will be reinstated, if required by the RWQCB or another agency with jurisdiction. In such cases, LAWA will coordinate the design of the project component and the re-design of the remediation systems to ensure that they are compatible and to ensure that the proposed remediation system is comparable to the system originally in place. If it is determined during the pre-construction evaluation that construction will preclude reinstatement of the remediation program, LAWA will obtain approval to initiate construction from the agency with jurisdiction.

4.6.1.8 Level of Significance After Mitigation

With implementation of Standard Control Measures (Mitigation Measures) LAX-HM-1 and LAX-HM-2, significant impacts associated with prevention of cleanup of sites that are currently undergoing soil or groundwater remediation would be reduced to a level that is less than significant.

4.6.2 SAFETY HAZARDS

4.6.2.1 Introduction

This section addresses the potential of the proposed Project to result in impacts related to the impairment of the effective implementation of an adopted emergency response or emergency evacuation plan.

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 safety hazards. For several of these screening thresholds, the Initial Study found that the Project would result in "less than significant impacts" or "no impact"; and thus, no further analysis of these topics in an EIR was required. The following Initial Study screening criteria related to safety hazards do not require any additional analysis in this EIR:

- Potential impacts related to the creation of a safety hazard for people residing or working within an airport land use plan or within 2 miles of a public airport or public use airport were evaluated and determined to have a "Less than Significant Impact" in the Initial Study. As discussed therein, all facilities associated with the proposed Project and all potential future related development would comply with Federal Aviation Administration (FAA) Part 77,[15] which includes safety related design standards, and with Los Angeles Ordinance No. 132,319,[16] which regulates building height limits and land uses within the Hazard Area established by the Los Angeles Planning and Zoning Code to protect aircraft approaching and departing from LAX from obstacles. As such, the proposed Project would not result in a safety hazard for people residing or working in the vicinity. Therefore, this issue is not addressed any further within this section.
- Potential impacts related to the creation of a safety hazard for people residing or working in the vicinity of a private airstrip were evaluated and determined to have "No Impact" in the Initial Study. While the Hawthorne Airport, the closet private airstrip, is located approximately two miles southeast of the proposed Project, the proposed Project would not cause any changes to the number or type of aircraft operations or aircraft flight paths to LAX or Hawthorne Airport. Furthermore, no potential future related development areas would be located within the vicinity of a private airstrip. Therefore, people residing or working in the vicinity of a private airstrip would not be exposed to safety hazards from the proposed Project, and this issue is not addressed any further within this section.

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15 14 Code of Federal Regulations, Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*.

16 Ordinance 132,319 has been superseded by Section 12.50 of the Comprehensive Zoning Plan of the City of Los Angeles which regulates building height limits and land uses within the Hazard Area established by the Planning and Zoning Code to protect aircraft approaching and departing from LAX from obstacles.

- Potential impacts related to the exposure of people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands were evaluated and determined to have “No Impact” in the Initial Study. Facilities associated with the proposed Project and all potential future related development areas are located in predominately paved, developed, and urbanized areas. There are no wildlands or fire hazard areas containing flammable brush, grass, or trees, and the Project site and potential future related development areas are not within a City of Los Angeles Wildfire Hazard Area. As such, the proposed Project would not expose people or structures to significant loss, injury, or death due to wildland fires. Therefore, this issue is not addressed any further within this section.

4.6.2.2 Methodology

Interference with emergency response plans was evaluated based on impacts to existing and proposed local and regional emergency response plans, including the LAX Airport Emergency Plan (AEP). Because construction of the proposed Project would result in temporary and permanent closures to local airport circulation roads in the vicinity, construction activities and any potential future related development associated with the proposed Project were evaluated based on their potential to interfere with the LAX AEP and other emergency access requirements mandated by the FAA, State Fire Marshal, and Los Angeles Fire Code regulations. A detailed analysis of proposed Project impacts on fire and police response times is included in Section 4.11, *Public Services*.

4.6.2.3 Existing Conditions

4.6.2.3.1 Regulatory Setting/Emergency Response and Evacuation Plans

FAA FAR Sections 139.315–139.319—Air Rescue and Firefighting (ARFF)

Aircraft rescue and firefighting (ARFF) is regulated under FAR Sections 139.315 through139.319. Handling and storage of hazardous substances and materials that require fire safety training in fuel farm and storage areas, and required compliance with locally adopted fire codes are provided for under FAR 139.321. Under FAR 139.325, airport safety plans require coordination with firefighting services and provision of rescue vehicles large enough to handle the maximum persons carried aboard the largest aircraft that can be served. ARFF protocol requires apparatus to respond in 3 minutes or less from the position of the equipment to all areas within aircraft operating areas (FAR 139.319(h)). Should equipment become inoperable for a period exceeding 48 hours, the FAA requires that airport operations be limited to the response capability of equipment in operative condition unless waived by the FAA. The FAA-operated Airport Traffic Control Tower (ATCT) at LAX activates the emergency telephone system, which notifies airlines when they are involved in safety-related operations. In addition, the ATCT coordinates runway assignments with LAX Airfield Operations personnel and stops all aircraft traffic on runways and taxiways that are adjacent to the scene of an emergency response, as required. Furthermore, LAWA has recommissioned an airline Fire Drill Training Facility on LAWA property, outside of the proposed Project area. Training at this facility includes live jet fuel fire-training exercises that comply with FAR Section 139.

Employee Emergency Plans and Fire Prevention Plans (29 CFR 1910.38)

Natural disasters are emergencies declared by the President of the United States in response to and in agreement with a request from the Governor of the State of California. Emergency action plans are addressed in general by 29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans. The requirement for preparation for airport response to a natural disaster is regulated by FAR 139.325(4). In the event of a natural disaster, it is the responsibility of the ATCT to issue a Notice to Airmen (NOTAM) if it is determined that such an action is necessary. In the event that the condition of the airport or any part of the airport is determined to be unsafe for landings or takeoffs, a NOTAM is issued closing the airport or any of its parts. In addition, the ATCT verifies that the navigational aids system is operating.

State of California Uniform Fire Code—Fire Access

State regulations include the Uniform Fire Code, which sets the framework for fire protection and safety within the State of California. The Uniform Fire Code contains several sections that provide authority and standards that pertain to operations at airport facilities.

Chapter 9 (Fire Protection Systems), Section 912 specifies access roadway requirements for fire apparatus. Chapter 10 (Means and Egress), Sections 1003.7, 1009, and 1010, provide standards for elevators, escalators, and moving walks; stairways; and ramps, respectively.

The Mutual Aid Operations Plan

The Disaster Preparedness Section of the Los Angeles County Sheriff's Department, Emergency Operations Bureau conducts active disaster/emergency planning with other public and private organizations, including all incorporated cities within the County, the American Red Cross, and various public and private civil defense/disaster-planning entities. The County of Los Angeles is also required to organize a formal mutual aid agreement between all fire departments within its jurisdiction. Additional informal agreements may be made directly between the fire departments involved. The Mutual Aid Operations Plan is a reciprocal agreement between signatory agencies to provide personnel and resources to assist other member agencies during emergency and/or conditions of extreme peril. The Mutual Aid Operations Plan provides a structure of response should an emergency at LAX arise that requires immediate response by more fire protection personnel than would be available to the LAFD using all other available resources.

LAX Rules and Regulations

LAX fire protection services operate under the requirements and guidelines of the LAFD, as well as the guidelines and requirements of LAWA's *LAX Rules and Regulations* manual,[17] the LAX Air/Sea Disaster Preparedness Plan, and the Fire Protection and Prevention Plan portion of the City of Los Angeles General Plan. The Airport Fire Inspector is required to inspect all buildings, structures, and premises periodically, as well as enforce all applicable laws, rules, and regulations regarding fire protection, including the Uniform Fire Code, National Fire Protection Association Codes and Standards, and the LAX Air/Sea Disaster Preparedness

[17] City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

Plan. All of the fire and fire-related safety provisions of the *LAX Rules and Regulations* manual and the LAX Air/Sea Disaster Preparedness Plan are in accordance with FAA Regulations, the Uniform Fire Code, the National Fire Protection Association Code, and the LAFD Fire Code.

Emergency Evacuation Response Plans

LAWA and tenants of LAX maintain Emergency Response Evacuation Plans to minimize the potential for and effects of an accident. Tenant Emergency Response Evacuation Plans include, but are not limited to, the following: mapping of emergency exits; evacuation routes for vehicles and pedestrians; and documentation and routes of nearest hospitals and fire departments.

Furthermore, in accordance with FAA guidance provided in Advisory Circular 150/5200-31C, the LAX AEP addresses essential emergency-related and deliberate actions to ensure safety and the provision of adequate emergency services for LAX and surrounding communities.[18] The AEP details the roles and responsibilities that first responders, airport managers, commercial carriers, and airport tenants are to undertake in an emergency.[19]

City of Los Angeles Fire Protection and Prevention Plan

The City of Los Angeles Fire Protection and Prevention Plan is an element of the 1979 City of Los Angeles General Plan. The Fire Protection and Prevention Plan specifies policy and establishes standards for the distribution, design, construction, and location of fire protection facilities to safeguard life, property, and the environment. The Fire Protection and Prevention Plan specifies general location requirements to minimize response time and is dependent on the type of fire company responding (i.e., engine or truck company) and the type of land use. Generally, commercial and industrial uses require a truck company response distance of 1 mile and an engine company response distance of 0.75 mile. However, higher-density uses would require truck and engine company response distances of 1.5 miles and 1 mile, respectively. Neighborhood uses, such as residential neighborhoods, require a truck company response distance of 2 miles and an engine company response distance of 1.5 miles.

4.6.2.4 Thresholds of Significance

The proposed Project would have a significant impact related to safety hazards if it would result in the following condition:

- Impairment of the effective implementation of an adopted emergency response or emergency evacuation plan.

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18 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5200-31C, *Airport Emergency Plan,* June 19, 2009, as amended November 3, 2010.

19 City of Los Angeles, Mayor's Blue Ribbon Panel, *Report of the Mayor's Blue Ribbon Panel on Airport Security: A Report to Los Angeles Mayor Antonio R. Villaraigosa Concerning Public Safety at Los Angeles International Airport,* June 2011.

This threshold was derived from the *L.A. CEQA Thresholds Guide*.[20]

4.6.2.5 Impact Analysis

4.6.2.5.1 LAX Landside Access Modernization Program Project

Construction

Construction of the proposed Project would alter ground access throughout the Project site. Traffic congestion associated with construction of the proposed Project could delay the emergency response activities by impeding the movement of emergency vehicles. These delays could impair the implementation of the adopted emergency response plans described and identified in Section 4.6.2.3.

Construction activities would include temporary and intermittent local roadway and/or lane closures along W. Century Boulevard, S. Sepulveda Boulevard, Westchester Parkway/W. Arbor Vitae Street, Airport Boulevard, Aviation Boulevard, W. 96th Street, W. 98th Street, and S. La Cienega Boulevard. These roadway closures would have the potential to result in an increase in response times for fire and police personnel.

Construction of the proposed roadway improvements would increase traffic congestion throughout the Project site until the year 2024, when the majority of the roadway improvements would be completed. The LAFD's, LAWA Police Division (LAWAPD), and LAPD's average response times in and around the Project site may increase as a result of the response distance and traffic conditions. Moreover, removal of the W. 96th Street/Sky Way Bridge may also potentially impact the ability for Fire Station 5 to adequately respond to incidents within the CTA. Traffic congestion would improve after 2024; however, the remaining roadway improvements would not be completed until 2035. Therefore, the phased implementation of these roadway improvements by 2024 and 2035 would have the potential to delay emergency access throughout the Project site, thereby impairing the implementation of the adopted emergency response or emergency evacuation plans described in Section 4.6.2.3.

As discussed in Section 4.11, *Public Services,* LAWA would coordinate with the LAFD, LAWAPD, and LAPD regarding emergency access and other design needs to ensure that emergency service levels are maintained during construction. In the event construction activities were to result in deterioration of traffic conditions, use of emergency sirens, alternate response routes, and multiple station responses would help facilitate emergency access and response. Additionally, the LAFD may utilize its temporary bike medic patrol teams during construction of the proposed Project as a result of various road closures. This temporary mobile support would allow the LAFD to adequately provide emergency response within the CTA.

As described above, traffic congestion associated with construction of the proposed Project could delay the LAFD's, LAWAPD's, and LAPD's emergency response activities by impeding the movement of emergency vehicles, thereby impairing the implementation of the adopted emergency response plans described and

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[20] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

identified in Section 4.6.2.3. The impacts associated with the impairment of the implementation of an adopted emergency response or emergency evacuation plan would be significant.

Operations

The proposed Project would include implementation of the APM guideway, ITFs, APM MSF, and CONRAC, as well as various roadway improvements that would serve the CTA and proposed Project components. As such, emergency access throughout the Project site would be provided by the existing and proposed street systems. The design of the proposed APM guideway, ITFs, APM MSF, and CONRAC would comply with fire and building code requirements by ensuring ingress and egress driveways provide adequate emergency access. As discussed in Section 4.11, *Public Services*, in the event of an emergency evacuation the APM guideway would have an emergency walkway along the entire guideway which would provide egress for passengers as well as access for emergency personnel.

To the extent possible, the APM guideway would follow the movement of the underlying street system to minimize conflicts with the surrounding street network utilized by emergency personnel. However, any access modifications throughout the site would be maintained through the proposed roadway improvements so that all areas would be accessible to emergency personnel. As discussed in Section 4.12, *Transportation/Traffic,* these proposed improvements would involve new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, modified freeway ramps, new or realigned driveways, roadway closures, and intersection improvements. Implementation of these roadway improvements would reduce traffic congestion and curb-front demands, as discussed in Section 4.12, *Transportation/Traffic*. Therefore, the proposed Project components, including the roadway improvements, would not interfere with the implementation of the adopted emergency response plans described and identified in Section 4.6.2.3. Impacts associated with the effective implementation of an adopted emergency response or emergency evacuation plan would be less than significant.

4.6.2.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The proposed Project would require changes to the configuration of existing parcels owned by LAWA that would create new parcels, which would be used for construction laydown and staging areas (see Figure 2-51). After construction, there is the potential for future development of these new parcels for commercial and airport-related support uses. Development of individual future related projects may require temporary and/or partial street closures due to construction activities. Such closures would have the potential to impair the effective implementation of adopted emergency response or emergency evacuation plans. However, any such closures would be temporary in nature and would be coordinated with the City of Los Angeles Departments of Transportation (LADOT), Building and Safety, and Public Works. Therefore, impacts on adopted emergency response or emergency evacuation plans would be less than significant. Additionally, prior to the issuance of any building permits, the potential future developers would be required to develop individual Emergency Response Evacuation Plans in consultation with the LAFD. The Emergency Response Evacuation Plan would include, but not be limited to, the following: mapping of emergency exits; evacuation routes for vehicles and pedestrians; and documentation and routes of nearest hospitals and fire departments. Impacts associated with the effective implementation of an adopted emergency response or evacuation plan resulting from potential future related development would be less than significant.

4.6.2.6 Cumulative Impacts

As discussed in Section 4.6.2.5, the proposed Project would alter ground access to, from, and around LAX, which has the potential to impair the effective implementation of an adopted emergency response plan by impeding the movement of emergency vehicles. While local roadway and/or lane closures would occur for varying periods during construction, roadway access would be maintained through detours and diversions. These roadway closures would have the potential to result in an increase in response times for emergency personnel, which could result in incremental impacts on interference with adopted emergency response or emergency evacuation plans.

Cumulative projects that forecasted to be constructed concurrent with implementation of the proposed Project facilities are identified in Table 3-1. As with the proposed Project, other development projects at/adjacent to the proposed Project site would be required to coordinate temporary and/or partial street closures with applicable local transportation, building and safety, and/or public works departments and to develop emergency response plans. Impacts to emergency access routes and response times could still occur from construction of cumulative projects if emergency access routes and local road closures are not closely coordinated. As a result, construction of the proposed Project in combination with cumulative projects could interfere with adopted emergency response or evacuation plans, which would be a significant cumulative impact. The proposed Project's contribution to significant cumulative impacts associated with the implementation of an adopted emergency response or evacuation plan would be cumulatively considerable.

4.6.2.7 Mitigation Measures

As indicated in Section 4.6.2.5, impacts related to the impairment of the effective implementation of an adopted emergency response plan during construction would be significant. The following mitigation measures are proposed to reduce significant impacts to implementation of an adopted emergency response plan during construction.

- **MM-ST (LAMP)-1. Construction Traffic Project Task Force.** LAWA would establish a Project Task Force specific to the LAX Landside Access Modernization Program to coordinate deliveries, monitor traffic conditions, advise motorists about detours and congested areas, and monitor and enforce delivery times and routes. The Project Task Force could be comprised of key stakeholders from LAWA, the Coordination and Logistic Management Team (CALM), other City departments, and others as deemed appropriate. This Project Task Force would review traffic management plans to mitigate traffic impacts on public roadways and the CTA where possible. The Project Task Force would review the traffic management plans and work plans to ensure:
    - Coordination with all other LAWA construction projects;
    - Coordination with other public infrastructure projects;
    - Detour impact analysis for pedestrian, business, bicycle, and traffic flow;
    - Coordinate closures and restricted access with all potential special events and holiday traffic flow;
    - Notification to the public with use of static signage, changeable message signs, media announcements, Airport website, etc.;
    - Work with LAWA police and the LAPD to enforce delivery times and routes;

- Coordinate with police and fire personnel regarding maintenance of emergency access and response times;
- Monitor and coordinate deliveries;
- Establish detour routes;
- Work with residential and commercial neighbors regarding upcoming construction activities; and
- Analyze traffic conditions to determine the need for additional traffic signals, signs, lane restriping, signal modifications, etc.

The Project Task Force would develop a comprehensive and long-term communication and construction impact outreach strategy for implementation during construction. The Task Force would work closely with other LAWA departments, including Public Relations, Planning and Development, and Operations. The Task Force would also ensure that an innovative and effective construction outreach and communication strategy is developed to keep key stakeholders, businesses, and residents notified and informed during construction of the proposed Project.

Prior to initiation of construction, contractors would be required to complete Worksite Traffic Control Plans (WTCP). The WTCP would include a description of how the contractor will manage all construction-related traffic. The WTCP would 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 WTCP would require approval of the Project Task Force as well as any appropriate agencies and departments. Contractor compliance would be monitored throughout the duration of their contract. LAWA would require contractors to implement and comply with the following WTCP measures to reduce construction-related traffic impacts associated with projects at LAX, including:

<u>Designated Truck Delivery Hours</u>

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. Peak Airport traffic periods occur throughout most of the day, therefore, to the extent possible, truck delivery hours shall be limited to overnight hours from 1:00 a.m. to 9:00 a.m.

<u>Designated Truck Routes</u>

For dirt, aggregate, bulk cement, and all other materials and equipment, truck deliveries would be on designated routes only (freeways and non-residential streets).

Designated truck routes are limited to:

- Aviation Boulevard (Imperial Highway to Manchester Boulevard)
- Manchester Boulevard (Aviation Boulevard to I-405)

- Florence Avenue (Aviation Boulevard to I-405)
- La Cienega Boulevard (north of Imperial Highway)
- Pershing Drive (Westchester Parkway to Imperial Highway)
- Westchester Parkway (Pershing Drive to Sepulveda Boulevard)
- Century Boulevard (Sepulveda Boulevard to Aviation Boulevard)
- Sepulveda Boulevard (Westchester Parkway to Imperial Highway)
- Imperial Highway (Pershing Drive to I-405)
- I-405
- I-105

Stockpile Locations

All stockpile locations must be pre-approved by LAWA. Stockpile locations/laydown/staging areas shall be accessed by construction vehicles with minimal disruption near residential neighborhoods.

- **MM-ST (LAMP)-2. Maintenance of Traffic.** To ensure that continued vehicular access to community facilities is maintained, the contractor shall provide at least one lane of traffic in each direction on access cross streets that are not going to be dead-ended during construction. If one lane of traffic cannot be maintained, the contractor shall provide a detour route for motorists.
- **MM-ST (LAMP)-3. Worksite Traffic Control Plans.** Before the start of construction, Worksite Traffic Control Plans (WTCP) and Traffic Circulation Plans, including identification of detour requirements, will be formulated in cooperation with the affected municipalities and other jurisdictions (County, State) in accordance with the Work Area Traffic Control Handbook (WATCH) manual and the California Manual on Uniform Traffic Control Devices (MUTCD)[21] as required by the relevant municipality. The WTCPs will be based on lane requirements and other special requirements defined by the LADOT, the affected municipalities for construction within their City and from other appropriate agencies for construction in those jurisdictions. The WTCP's shall be designed to maintain designated Safe Routes to School wherever possible during times of the year when nearby schools are in session. The WTCP's shall be reviewed and coordinated with the LAWA Project Task Force 30 days in advance of any restriction or closure.
- **MM-ST (LAMP)-4. Roadway Closure Restrictions.** No designated major or secondary highway will be closed to vehicular or pedestrian traffic except at night or on weekends, unless approval is granted by the jurisdiction in which it is located.
- **MM-ST (LAMP)-5. Traffic Maintenance During Construction.** The following would be implemented during construction when the Project Task Force and appropriate City departments or local jurisdictions deem necessary:

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21 California State Transportation Agency, Department of Transportation, *California Manual on Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California*, 2014 Edition (including Revision 1), November 7, 2014.

- A flagperson shall be placed at the truck entry and exit from the Project site.
- Deliveries and pick-ups of construction materials shall be scheduled during non-peak travel periods to the degree possible and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
- Access shall remain unobstructed for land uses in proximity to the Project site during construction.
- Unless otherwise specified in the WTCP, the contractor shall maintain access to the businesses that rely on on-street parking and pedestrian access during construction. If it is necessary to temporarily restrict access to a business, the contractor shall provide the facility advance notice of restrictions. Unless otherwise specified in the WTCP, the contractor shall schedule access restrictions to off-peak hours or during times when the business is closed and shall not fully restrict access for the total hours of operation of business on any given day of operation.
- Relative to maintaining access to businesses, construction activities shall be sequenced to minimize the temporary removal of multiple blocks of on-street parking at one time unless otherwise specified by the WTCP.
- Contractors shall use temporary special signage to inform the public of closure information in advance of temporary closures. Signage shall also provide special access directions, if warranted.
- Notice of closure will be prepared by the contractor with legible maps and reviewed prior to dissemination by the Project Task Force.
- A construction management plan shall be developed by the contractor and will be implemented during construction, to include the following:
    - Establish requirements for the loading, unloading, and storage of materials on the Project site
    - Coordinate with the City and emergency and safety service providers to ensure adequate access is maintained to the project site and neighboring businesses.

In addition to the mitigation measures identified above, the contractor would be required to comply with City and local jurisdiction guidelines and regulations.

4.6.2.8 Level of Significance after Mitigation

With implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5, significant impacts of the proposed Project related to the impairment of the effective implementation of an adopted emergency response plan would be reduced to a level that is less than significant. Implementation of these mitigation measures would reduce the impact to implementation of an adopted emergency response plan through the establishment of a Project Task Force, Worksite Traffic Control Plans, roadway closure restrictions, and other measures to ensure emergency access is maintained during construction. As such, the proposed Project's contribution to significant cumulative impacts to implementation of an adopted emergency response or emergency evacuation plan would not be cumulatively considerable.

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4.7 Hydrology, Water Quality, and Groundwater

4.7.1 INTRODUCTION

This section analyzes the proposed Project's impacts to hydrology, water quality, and groundwater quality as a result of alterations to drainage patterns.

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 hydrology and water quality. For several of these screening thresholds, the Initial Study found that the proposed Project would result in "no impact", and thus, no further analysis of these topics in an EIR was required. The following Initial Study screening criteria related to hydrology do not require any additional analysis in this EIR:

- Potential flooding impacts resulting from housing placed within a 100-year flood hazard area or structures placed within a 100-year flood hazard area that would impede or redirect flood flows were evaluated and determined to have "No Impact" in the Initial Study. The proposed Project does not involve the construction of housing and there are no 100-year flood hazard areas within the Project boundaries.
- Potential inundation by seiche, tsunami, or mudflow was evaluated and determined to have "No Impact" in the Initial Study. The Project site is located approximately 2 miles east of the Pacific Ocean and is not delineated as a potential inundation or tsunami affected area on the California Emergency Management Agency Tsunami Inundation Map for Emergency Planning. Seiches and mudflows are not a risk as the Project site is located on, and is surrounded by, relatively level terrain and urban development.

Therefore, this section addresses the proposed Project's impacts on hydrology or water quality as they pertain to stormwater discharge, groundwater, and drainage. Impacts to drainage are primarily a function of changes to pervious and impervious areas; changes in surface flow patterns; and changes to the storm drain infrastructure. Impacts to water quality are primarily a function of changes in existing land use types. The analysis presented in this section characterizes the baseline conditions for hydrology and water quality in relation to drainage patterns, describes methods used in the evaluation of drainage patterns, summarizes the regulatory setting that guides the evaluation of hydrology and water quality, addresses impacts to hydrology and water quality as a result of alterations to drainage patterns associated with the proposed Project, and provides feasible mitigation measures capable of avoiding or reducing the significant effects of the proposed Project. Detailed information that supports this section is provided in **Appendix L** of this Draft EIR.

4.7.2 METHODOLOGY

4.7.2.1 Hydrology

The analysis compares existing drainage conditions with conditions projected for the proposed Project. The analysis describes baseline conditions for the existing Airport area, as well as for areas proposed to be acquired. Changes in impervious surface were used to approximate changes in stormwater runoff. Impervious factors for the different types of land use were referenced from the City of Los Angeles Storm

Drain Design Manual.[1] The peak flow rate generated from a particular land use and area has been estimated or calculated and compared to the design capacity of the existing drainage system using the Los Angeles County Modified Rational Method.

4.7.2.2 Water Quality

Water quality impacts associated with dry weather flows and construction activities were evaluated qualitatively. Dry-weather water flows from urbanized land uses and off-site flows during construction activities are largely prohibited by stormwater permits and would therefore be unlikely to occur as part of the analysis of drainage capacity.

For evaluating water quality, the event mean concentration (EMC) was used to estimate Project pollutant loadings. Since land use can be quantified by amount and type, EMCs are used to characterize the average pollutant concentrations in urban runoff from particular land uses. Local EMC data for land use categories have been compiled by the several municipalities that participated in an extensive stormwater monitoring program to support stormwater quality management in Los Angeles County. EMCs for all the land use categories, with the exception of Airport operations and Airport open space, are based on data collected between 1994 and 2000 by the Los Angeles County Department of Public Works (LACDPW), as shown in **Table 4.7-1.**

Table 4.7-1: EMC Values

POLLUTANT	EMC FOR INDUSTRIAL (MG/L)	EMC FOR COMMERCIAL (MG/L)	EMC FOR OPEN SPACE (MG/L)	EMC FOR MIXED RESIDENTIAL (MG/L)	EMC FOR TRANSPORTATION (MG/L)
Total Suspended Solids	240	66	186	63	78
Total Phosphorus	0.41	0.39	0.16	0.26	0.44
Total Kjedahl Nitrogen (TKN)	3.00	3.40	0.79	2.50	1.90
Total Cooper	0.03	0.04	0.02	0.02	0.06
Total Lead	0.02	0.02	0	0.01	0.01
Total Zinc	0.64	0.24	0.05	0.20	0.29
Oil and Grease	1.70	3.30	0	0	3.10
Biological Oxygen Demand (BOD)	20	27	12	18	21
Chemical Oxygen Demand (COD)	80	98	17	64	50
Ammonia	0.59	1.26	0.13	0.67	0.29
Fecal Coliform (MPN/100ml)	338,220	528,750	1,397	100	328,750
Fecal Enterococcus (MPN/100ml)	98,200	86,250	679	0	32,000

SOURCE: Los Angele County Department of Public Works, Table 4-12: Summary of 1994-2000 Land Use Results by Site.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

1 City of Los Angeles, Department of Public Works, *Storm Drain Design Manual-Part G*, June 1973.

The Modified Rational Method was used to determine the required stormwater volume for treatment.[2] This method requires that a unit hyetograph (i.e., graph indicating distribution of rainfall events over time) for the design storm be established before runoff computations can take place. Also, this method defines the 50-year, 24-hour design storm depth over the area, and the appropriate coefficients by which to multiply this depth to downscale to the 10-year storm intensity. A hyetograph (graphical representation of rainfall distribution of over time) for the Venice Beach area indicates that the Manchester Square and Dominguez Channel areas have a 50-year, 24-hour design storm[3] depth value between 5.0 and 5.2 inches; an average of 5.1 inches is utilized for this analysis.[4]

4.7.2.3 Groundwater

The groundwater analysis examines whether the proposed Project would interfere substantially with groundwater recharge by estimating both the groundwater recharge that occurs at the Project site under existing conditions and the groundwater recharge that would occur at the Project site under the proposed Project. The analysis then compares the change in groundwater recharge resulting from the proposed Project to the overall annual groundwater recharge within the basin to determine if a substantial reduction in groundwater level would occur.

4.7.3 EXISTING CONDITIONS

4.7.3.1 Regulatory Framework

4.7.3.1.1 Hydrology

Federal Aviation Administration

The Federal Aviation Administration (FAA) published Advisory Circular (AC) 150/5320-5D, *Airport Drainage Design,* that establishes guidance for engineers, airport managers, and the public in the design and maintenance of airport surface drainage systems and subsurface drainage systems for paved runways, taxiways, and aprons.[5] The FAA guidance includes minimum-design storm frequencies for three categories:

1. 2-year storm event for Department of Defense (DOD) airfields and heliports
2. 5-year storm event for FAA facilities
3. 10-year storm event for areas other than airfields

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2 Los Angeles County Department of Public Works, *Hydrology Manual*, January 2006.

3 A 50-year, 24-hour design storm is the amount of rainfall predicted to occur once every 50 years over a 24-hour period, based on historic rainfall data for the area, as identified in the Los Angeles County *Hydrology Manual*.

4 Los Angeles County Department of Public Works, *Hydrology Manual,* Appendix A, January 2006.

5 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5320-5D, *Airport Drainage Design*, August 15, 2013.

However, the design frequency may be stricter to protect important facilities. AC 150/5320-5D states that "the degree of protection to be provided by the drain system depends largely on the importance of the facility as determined by the type and volume of traffic to be accommodated, the necessity for uninterrupted service, and similar factors." In addition, AC 150/5320-5D requires surface runoff to be disposed of properly to avoid damaging facilities, saturating the subsoil, and interrupting traffic.

Los Angeles County Flood Control District

The Los Angeles County Flood Control Act, adopted by the State Legislature in 1915, established the Los Angeles County Flood Control District (LACFCD) and empowered it to provide flood protection, water conservation, recreation, and aesthetic enhancement within its boundaries. The LACFCD is managed by the LACDPW. LACDPW has established a three-tiered policy on flood protection: capital flood protection, urban flood protection, and probable maximum flood protection.[6] Maximum flood protection deals with dams and debris basins, which are not part of the Project area. Capital flood protection applies to natural watercourses, including a portion of the LACFCD-owned Dominguez Channel. The capital flood protection level requires that drainage systems have the capacity to convey runoff from a 50-year storm frequency. Urban flood protection applies to all developed areas not covered under the capital flood protection level. However, since the Project area is within the City of Los Angeles, the City's design standards are controlling.

City of Los Angeles

In 2011, the City of Los Angeles Board of Public Works approved the Stormwater Low Impact Development (LID) Ordinance[7] to impose LID strategies on projects requiring building permits. LID comprises a set of site design approaches and best management practices (BMPs) that are designed to address runoff and pollution at the source. Unlike traditional stormwater management, which collects and conveys stormwater runoff through storm drains, pipes, or other conveyances to a centralized stormwater facility, LID uses site design and stormwater management to maintain the site's pre-development runoff rates and volumes. The Stormwater LID Ordinance requires 100 percent of rainwater from a three-quarter inch rainstorm to be completely captured, infiltrated, and/or used on-site. If site constraints do not allow for LID strategies to be implemented, off-site mitigation or fee payment for off-site mitigation is allowed.

The City's *Development Best Management Practices Handbook*[8] ("Handbook") and the County's *Low Impact Development Standards Manual*[9] were developed to assist developers (as well as City departments for public works projects such as those at LAX) in complying with the LID Ordinance. The Handbook provides the necessary steps required for the project review and permitting process for obtaining approval of a LID Plan in compliance with the LID Ordinance.

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6 Los Angeles County Department of Public Works, *Hydrology Manual,* January 2006.

7 City of Los Angeles, Ordinance No. 181,899, Chapter VI, Article 4.4, October 7, 2011, Available: http://www.lastormwater.org/wp-content/files_mf/finallidordinance181899.pdf.

8 City of Los Angeles, *Development Best Management Practices Handbook, Low Impact Development Manual*, Part B, Planning Activities, 4th edition, June 2011.

9 County of Los Angeles, Department of Public Works, *Low Impact Development Standards Manual,* February 2014.

4.7.3.1.2 Water Quality

Clean Water Act of 1972

The Clean Water Act (CWA) of 1972 is the principal statute that governs water quality in the United States; it provides the legal framework to several State and local regulations. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The nationwide implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (USEPA).

Section 402 of the CWA, National Pollutant Discharge Elimination System (NPDES) Program

The CWA makes it illegal to discharge pollutants from a point-source to Waters of the United States. Section 402 of the CWA creates the National Pollutant Discharge Elimination System (NPDES) regulatory program. To comply with Section 402(p) of the CWA, the USEPA developed a two phase NPDES stormwater program to address stormwater discharges from industrial sources and municipalities. The Los Angeles metropolitan area and LAX are currently regulated under Phase I of the NPDES Stormwater Program. Phase I began in 1990 and applied to large and medium municipal separate storm sewer systems (MS4). MS4s are described as storm drain systems and include streets, gutters, conduits, natural or artificial drains, channels and water courses, or other facilities that are owned, operated, maintained, or controlled by permittees (cities and counties) for the purpose of collecting, storing, transporting, or disposing stormwater.

The CWA requires permits for storm drain systems to (1) be issued on a system or jurisdiction wide basis; (2) include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and (3) require controls to reduce the discharge of pollutants to the maximum extent practical (MEP), including management practices, control techniques and system, design, and engineering methods. Under this program, the Los Angeles Regional Water Quality Control Board (RWQCB) developed requirements for the Standard Urban Stormwater Mitigation Plan (SUSMP), which addresses stormwater pollution from new development and redevelopment projects. The SUSMP is a model guidance document for use by permittees to select post-construction BMPs. The SUSMP program applies to specified project types.

BMPs are defined in the SUSMP as any program, technology, process, sitting criteria, operational methods or measures, or engineered systems, which, when implemented, prevent, control, remove or reduce pollution.[10] The general requirements of the SUSMP include:

- Controlling peak stormwater runoff discharge rates
- Conserving natural areas
- Minimizing stormwater pollutants of concern

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[10] Regional Board Executive Officer, *Standard Urban Storm Water Mitigation Plan for Los Angeles County and Cities in Los Angeles County,* March 8, 2000.

- Protecting slopes and channels
- Providing storm drain stenciling and signage
- Property designing outdoor material storage areas
- Property designing trash storage areas
- Providing a proof of ongoing BMP maintenance

Three types of BMPs are described in the SUSMP: source control, structural, and treatment control BMPs.[11] The SUSMP also specifies design standards for structure or treatment control BMPs to either infiltrate or treat stormwater runoff and to control peak flow discharge.

Porter-Cologne Water Quality Act

Division 7 of the California Water Code (CWC), also known as the Porter-Cologne Water Quality Control Act, contains provisions that cover water quality protection and management for Waters of the State. The Porter-Cologne Water Quality Control Act applies to surface waters, wetlands, and groundwater, and to both point and nonpoint sources of pollution. Provisions contained in the act implement the NPDES program, dredge and fill programs, and civil and administrative penalties.

The Porter-Cologne Water Quality Control Act establishes the State Water Resources Control Board (SWRCB) and the nine RWQCBs as the principal state agencies responsible for the protection, and, where possible, the enhancement of water quality. The SWRCB sets statewide policy, and together with the RWQCBs, implements State and federal laws and regulations pertaining to water quality. Each RWQCB is required to prepare and periodically update a Water Quality Control Plan (Basin Plan) that identifies existing and potential beneficial uses for specific water bodies. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic basis for water quality regulation in each region. All discretionary projects requiring permits from the RWQCB (i.e., waste discharge requirements and NPDES permits) must implement Basin Plan requirements (i.e., water quality standards), taking into consideration the beneficial uses of State waters to be protected.

The Los Angeles RWQCB developed the Basin Plan for the Los Angeles Region,[12] which guides conservation and enhancement of water resources and establishes beneficial uses for inland surface waters, tidal prisms, harbors, and groundwater basins within the region. Beneficial uses are designated so that water quality objectives can be established and programs that enhance or maintain water quality can be implemented. The Basin Plan was amended in December 2002 to incorporate implementation provisions for the region's bacteria objectives and to incorporate a wet weather bacteria Total Maximum Daily Load (TMDL) and dry weather

11 Regional Board Executive Officer, *Standard Urban Storm Water Mitigation Plan for Los Angeles County and Cities in Los Angeles County,* March 8, 2000.

12 California Regional Water Quality Control Board, Los Angeles Region 4, *Water Quality Control Plan, Los Angeles Region – Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties,* adopted June 13, 1994.

bacterial TMDL for Santa Monica beaches. In the future, the Basin Plan will be further amended after USEPA approves recently adopted TMDLs, such as the debris TMDL for Santa Monica Bay nearshore.

NPDES Construction General Permit

Pursuant to the CWA, the SWRCB issued a statewide NPDES general permit for stormwater discharges associated with construction activities.[13] Under this permit, construction activity that results in soil disturbances of at least 1 acre is required to obtain an individual NPDES permit or coverage under the GCASP. This requirement applies to both private and public agency construction projects, including projects undertaken at LAWA. Construction activities subject to this GCASP includes clearing, grading, and disturbances to the ground such as stockpiling or excavation. Compliance involves preparing and implementing a site-specific Stormwater Pollution Prevention Plan (SWPPP) to minimize pollution from construction activities. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges.

NPDES Industrial General Permit

The NPDES permit programs in California are administered by the SWRCB and by the nine RWQCBs that issue NPDES permits and enforce regulations within their respective region.[14] Pursuant to the CWA, the SWRCB re-issued a statewide Industrial Stormwater General Permit effective on July 1, 2015.[15] The Permit regulates the discharge of 10 categories of industrial activity, including transportation facilities. The General Industrial Permit requires the implementation of the Best Available Technology Economically Achievable (BAT), the Best Conventional Pollution Control Technology, and the development of an Industrial SWPPP and a monitoring plan. Through the Industrial SWPPP, sources of pollutants are to be identified and the means to manage the sources in order to reduce stormwater pollution are described.

NPDES Municipal Separate Storm Sewer (MS4) Permit

Since 1990, operators of large MS4s have been regulated under NPDES permits. Effective December 28, 2012, the Los Angeles RWQCB reissued the County of Los Angeles Municipal NPDES Permit (Order No. R4-2012-0175), which supersedes Order No. 01-182 (the old MS4 Permit). This serves as the NPDES Permit for MS4 stormwater and non-stormwater discharges within the County of Los Angeles. MS4 Permits require each regulated entity to develop a stormwater management program designed to prevent harmful pollutants from impacting water quality via stormwater runoff. The storm sewer systems regulated under MS4s include curbs and gutters, man-made channels, catch basins, and storm drains throughout the Los Angeles region. The purpose of the MS4 Permit is to ensure Permittees are not causing or contributing to exceedances of water

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13 National Pollutant Discharge Elimination System, *General Permit for Discharges from Construction Activities,* effective February 16, 2012 through February 16, 2017.

14 LAX is located within the jurisdiction of the Los Angeles RWQCB.

15 National Pollutant Discharge Elimination System, *General Permit for Storm Water Discharges Associated with Industrial Activities,* effective July 1, 2015 through June 30, 2020.

quality objectives or impairments of beneficial uses in the receiving waters of the Los Angeles region. The LACFCD, the County of Los Angeles, and 85 incorporated cities therein, including the City of Los Angeles, (collectively referred to as Permittees) are jointly covered under a single MS4 Permit (Order No. R4-2012-0175; NPDES Permit No. CAS004001) for the discharge of urban runoff to waters of the United States.

The MS4 Permit establishes the waste discharge requirement for stormwater and non-stormwater discharges within the watersheds of Los Angeles County. The MS4 Permit identifies conditions, requirements, and programs that municipalities must comply with to protect regional water resources from adverse impacts associated with pollutants in stormwater and urban runoff. Under the MS4 Permit, permittees reduce pollutants in stormwater discharges to the MEP. The MS4 Permit contains effluent limitations, water quality-based effluent limitations (WQBELS), receiving water limits (RWLs), Minimum Control Measures (MCMs), and TMDL provisions.

The County of Los Angeles Municipal Stormwater NPDES Permit contains a requirement for permittees to develop and implement programs for stormwater management within the County of Los Angeles. One specific requirement from the Development Planning Model Program is to develop a SUSMP. The SUSMP serves as a model guidance document for use by builders, land developers, engineers, planners, and others in selecting post-construction BMPs and in obtaining municipal approval for the urban stormwater runoff mitigation plan for a designated project prior to the issuance of building and grading permits. Permittees must implement minimum control measures that identify modifications that address watershed priorities, including (1) a Development Construction Program; (2) an Industrial/Commercial Facilities Program; (3) an Illicit Connection and Illicit Discharges Detection and Elimination Program; (4) a Public Agency Activities Program; and (5) a Public Information and Participation Program. Runoff from the proposed Project facilities would be treated on-site. Therefore, the benchmark pollutant values developed for projects approved for off-site mitigation do not apply.

Total Maximum Daily Load (TMDL) Program

Pursuant to the CWA, states are required to identify the water bodies that do not meet water quality standards despite control of point source discharges under NPDES permits. For these water bodies, states are required to develop appropriate TMDLs for the pollutants or flows causing the impairment. A TMDL represents an amount of pollution that can be released into a specific water body without causing a decline in water quality and impairment of beneficial uses. The TMDLs are established based on a quantitative assessment of water quality problems, the contributing sources, and load reductions or control actions needed to restore and protect an individual water body. As opposed to the NPDES programs, which focuses on reducing or eliminating non-stormwater discharges and reducing the discharge of pollutants to the MEP, TMDLs provide an analytical basis for planning and implementing pollution controls, land management practices, and restoration projects needed to protect water quality. Once established, the TMDL allocates the loads among current and future pollutant sources to the water body. TMDLs have now been adopted for the Santa Monica Bay, Dominguez Channel above the estuary, and the Los Angeles Harbor, to which Dominquez Channel is tributary. Both completed TMDLs and those in progress of being developed by the Los Angeles RWQCB for the Santa Monica Bay and Dominguez Channel are shown in **Table 4.7-2.**

Table 4.7-2 (1 of 2): List of TMDLs Applicable to the Project Area

LOCATION	POLLUTANT	STATUS
Santa Monica Offshore/Nearshore	Dichloro-diphenyl-trichloroethane (DDT) (tissue and sediment)	Expected TMDL completion in 2019
	Debris	Expected TMDL completion in 2019
	Fish Consumption Advisory. The Fish Consumption Advisory is due to DDT and polychlorinated biphenyls (PCBs).	Expected TMDL completion in 2019
	PCBs (tissue and sediment)	Expected TMDL completion in 2019
	Sediment Toxicity	Expected TMDL completion in 2019
Los Angeles Harbor—Consolidated Slip	2-Methlynaphthalene	In effect
	Benthic community effects	Expected TMDL completion in 2019
	Benzo(a)pyrene	In effect
	Benzo[a]anthracene	Expected TMDL completion in 2019
	Cadmium (sediment)	Expected TMDL completion in 2019
	Chlordane (tissue and sediment)	Expected TMDL completion in 2019
	Chromium (sediment)	Expected TMDL completion in 2019
	Chrysene	In effect
	Copper (sediment)	Expected TMDL completion in 2019
	DDT (tissue and sediment)	Expected TMDL completion in 2019
	Dieldrin	In effect
	Lead (sediment)	Expected TMDL completion in 2019
	Mercury (sediment)	Expected TMDL completion in 2019
	PCBs (tissue and sediment)	Expected TMDL completion in 2019
	Phenanthrene	In effect
	Pyrene	In effect
	Sediment toxicity	Expected TMDL completion in 2019
	Toxaphene (tissue)	Expected TMDL completion in 2019
	Zinc (sediment)	Expected TMDL completion in 2019

Table 4.7-2 (2 of 2): List of TMDLs Applicable to the Project Area

LOCATION	POLLUTANT	STATUS
Los Angeles/Long Beach Inner Harbor	Benthic community effects	Expected TMDL completion in 2019
	Benzo(a)pyrene	Expected TMDL completion in 2021
	Chrysene	Expected TMDL completion in 2021
	Copper	Expected TMDL completion in 2019
	DDT (tissue and sediment)	Expected TMDL completion in 2019
	PCBs	Expected TMDL completion in 2019
	Sediment toxicity	In effect
	Zinc (sediment)	In effect
Dominguez Channel (lined portion above Vermont Avenue)	Ammonia	Expected TMDL completion in 2019
	Copper	Expected TMDL completion in 2019
	Diazinon	Expected TMDL completion in 2021
	Indicator bacteria	In effect
	Lead	Expected TMDL completion in 2019
	Toxicity	Expected TMDL completion in 2021
	Zinc (sediment)	Expected TMDL completion in 2019
Dominguez Channel (Estuary to Vermont Avenue)	Ammonia	Expected TMDL completion in 2019
	Benthic community effects	Expected TMDL completion in 2019
	Benzo[a]pyrene (3,4-Benzopyrene -7-d)	Expected TMDL completion in 2019
	Benzo[a]anthracene	Expected TMDL completion in 2019
	Chlordane (tissue)	Expected TMDL completion in 2019
	Chrysene (C1-C4)	Expected TMDL completion in 2019
	Coliform bacteria	In effect
	Copper	Expected TMDL completion in 2019
	DDT (tissue and sediment)	Expected TMDL completion in 2019
	Diazinon	Expected TMDL completion in 2021
	Dieldrin (tissue)	Expected TMDL completion in 2019
	Indicator bacteria	In effect
	Lead (tissue)	Expected TMDL completion in 2019
	PCBs	Expected TMDL completion in 2019
	Phenanthrene	Expected TMDL completion in 2019
	Pyrene	Expected TMDL completion in 2019
	Sediment toxicity	Expected TMDL completion in 2021
	Zinc (sediment)	Expected TMDL completion in 2019

SOURCE: California Environmental Protection Agency, State Water Resources Control Board, "2010 California 303(D) List of Water Quality Limited Segments," USEPA Final Approval October 11, 2011, Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/category5_report.shtml, accessed March 3, 2016.

PREPARED BY: Ricondo & Associates, Inc., March 2016.

Groundwater

Water Replenishment District Act

In 1955 the State of California passed the Water Replenishment District Act that provides for the formation of water replenishment districts and grants authority to the district for the replenishment, protection, and preservation of groundwater supplies within that district. In 1959 the Water Replenishment District (WRD) of Southern California was created with authority for the West Coast Groundwater Basin, which underlies approximately 160 square miles of coastal Los Angeles County including the Project area.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, passed in 2014 provides local agencies with the authority to adopt groundwater management plans. The Act requires the formation of local groundwater sustainability agencies that would develop and implement plans to achieve long term groundwater sustainability. The legislation provides a framework for sustainable management of groundwater supplies by local authorities, with a limited role for state intervention when necessary to protect the resource. The Act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. It protects existing surface water and groundwater rights and does not impact current drought response measures. The California Water Commission approved the Department of Water Resources Emergency Regulations for Groundwater Sustainability Plans and Alternatives on May 18, 2016; the regulations went into effect in June 2016.

4.7.3.2 Existing Hydrology and Stormwater Drainage

The major surface drainage features within the boundaries of LAX consist of five stormwater sub-basins: Argo, Pershing, Dominguez Channel, Imperial, and Vista del Mar Sub-Basins, as shown in **Figure 4.7-1**. The Project site is located mostly within the North Dominguez Channel Watershed. A small portion of the Project site is situated to the west of the Dominguez Channel Watershed, extending into the Argo Watershed and the Imperial Watershed. These watersheds include both County of Los Angeles and City of Los Angeles drainage and flood control structures. County of Los Angeles facilities include the Dominguez Channel, which discharges to San Pedro Bay, as well as some of the individual storm drains that discharge into Santa Monica Bay. The City regulates the remaining drainage and flood control structures.

4.7.3.2.1 Argo Sub-Basin

The Argo Sub-Basin drains west of Sepulveda Boulevard and discharges directly into Santa Monica Bay. This sub-basin is generally bounded by Sepulveda Boulevard to the east, the Imperial and Pershing Sub-Basins to the west, Manchester Avenue to the north, and the Imperial Sub-Basin to the south.

The Argo storm drain carries runoff from approximately 1,100 acres of the northern portion of LAX as well as a smaller portion of the south central portion of the Airport. Stormwater runoff initially drains into a grassy drainage swale via catch basins, flows west to the Argo storm drain and continues several miles off-shore through a 10-foot diameter pipe into the Pacific Ocean.

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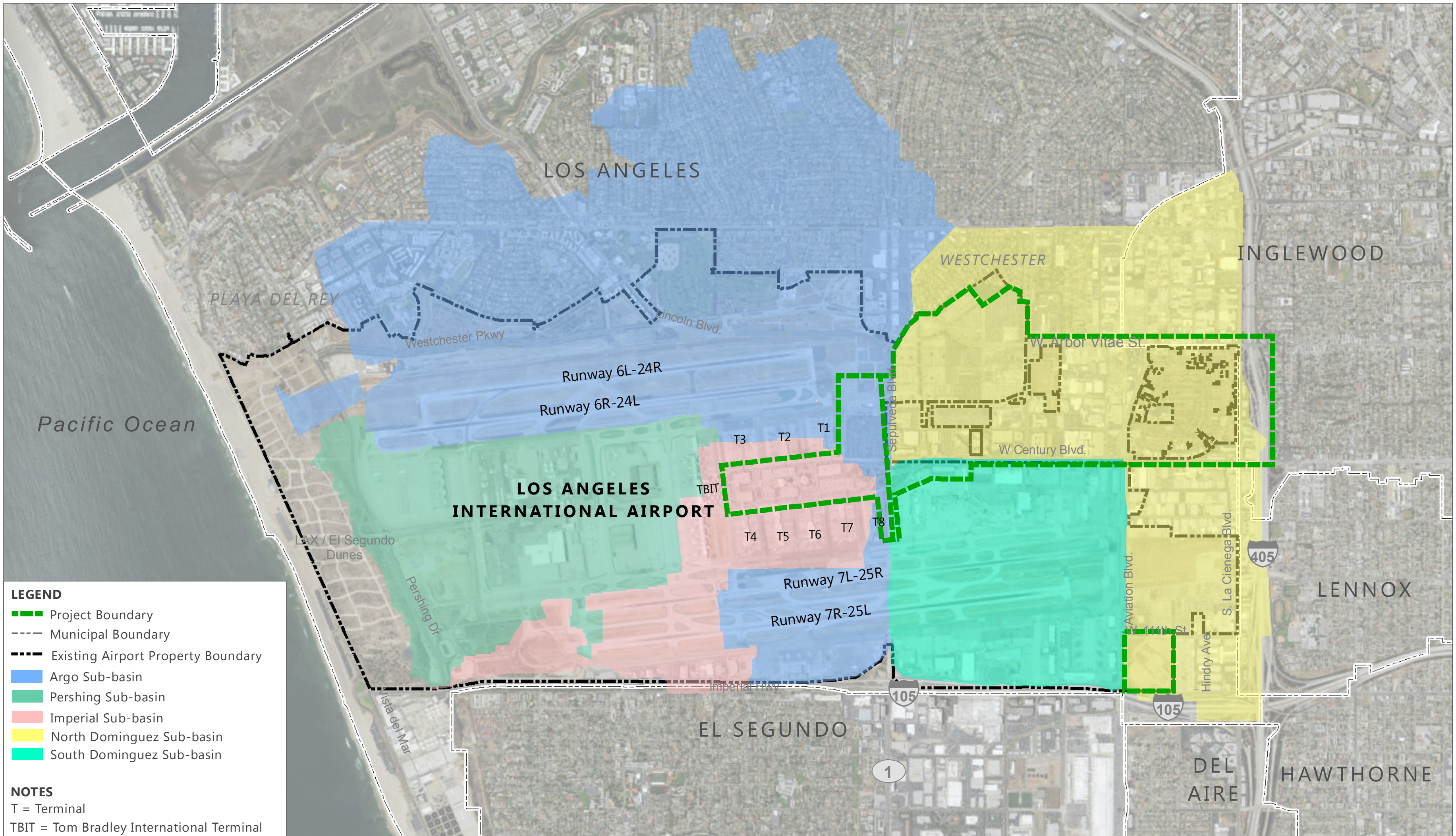

SOURCES: Los Angeles County, 2010 (city boundary); Ricondo & Assoicates, Inc., 2010 (airport property boundary); National Geographic World Map, ESRI Database, 2011; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-1

NORTH 0 3,500 ft.

LAX Stormwater Sub-basins

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Approximately 52.6 acres of the Project site are located within the Argo Sub-Basin. With the exception of limited areas of ornamental landscaping, the Project-related improvement areas within the Argo Watershed are 100 percent impervious surfaces, with stormwater draining into the existing storm drain system in and near the Central Terminal Area (CTA).

4.7.3.2.2 Imperial Sub-Basin

The Imperial Sub-Basin drains west of Sepulveda Boulevard and discharges directly into Santa Monica Bay. This Sub-Basin is generally bounded by the Argo Sub-Basin and Sepulveda Boulevard to the east, the Pershing Sub-Basin and the Los Angeles/El Segundo Dunes to the west, the Argo and Pershing Sub-Basins to the north, and Imperial Highway to the south.

Approximately 1,300 acres of LAX property drain into the Imperial Sub-Basin. Stormwater runoff discharged to the Imperial (County) Storm Drain is collected within dozens of catch basins covering the central and southwest portion of LAX. This system drains runoff from a majority of the industrial areas at LAX. Two main interceptor storm sewers form the main arteries of this drainage basin: one runs west along World Way West and then south along Pershing Drive; the second drains the CTA and flows southwest under the southern runways. These interceptors merge near the southwestern property boundary. These two interceptors convey flow from a total drainage area encompassing 1,300 acres. During low-flow (dry-weather) conditions and the first surge from a storm event, drainage from the two interceptors flows directly to a concrete-lined 2 million-gallon detention basin. The runoff that accumulates within the detention basin is pumped at a rate of approximately 150 gallons per minute (gpm) through a 36-by-10-by-6-foot clarifier to the nearby Hyperion Treatment Plant (HTP; operated by the City of Los Angeles). Under high-flow (wet-weather) conditions when influent to the basin exceeds the 150 gpm pumping capacity to the HTP, the stormwater detention basin fills, triggers closure of sluice gates, and diverts the excess (untreated) flow directly to the Santa Monica Bay via the Imperial (County) Storm Drain.[16]

The current capacity of the storm drainage infrastructure in the Imperial Sub-Basin of the Santa Monica Bay Watershed was investigated in previous hydrologic analysis.[17] That study indicated that the current drainage system within the Imperial Sub-Basin was sufficient to convey peak runoff rates associated with the LACDPW 50-year design storm.

Approximately 83.5 acres of the Project site are located within the Imperial Sub-Basin. With the exception of limited areas of ornamental landscaping, the Project-related improvement areas within the Imperial Watershed are 100 percent impervious surfaces, with stormwater draining into the existing storm drain system in and near the CTA.

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16 City of Los Angeles, Los Angeles World Airports, *Storm Water Pollution Prevention Plan (SWPPP) and Storm Water Monitoring Program Plan (SWMPP) Associated with Industrial Activities 2010-2011*, September 2011.

17 Parsons, Brinckerhoff, Quade & Douglas, Inc., *City of Los Angeles, Los Angeles World Airports, Final On-Site Hydrology Report for Los Angeles International Airport,* October 18, 2002.

4.7.3.2.3 Dominguez Channel Sub-Basin

The Dominguez Channel Sub-Basin is bounded generally by Sepulveda Boulevard to the west, Interstate 405 to the east, Manchester Boulevard to the north, and Interstate 105/Imperial Highway to the south. Approximately 1,100 acres of LAX property drain into the Dominguez Channel Sub-Basin. The Dominguez Channel Sub-Basin is part of the Dominguez Channel Watershed, which occupies approximately 133 square miles in the southern portion of Los Angeles County.

Surface runoff within the Dominguez Channel Watershed is collected via a series of paved ditches and closed pipe systems before being discharged to the Dominguez Channel. The Dominguez Channel itself begins approximately 2 miles east of LAX and extends south to, and through, the Dominguez Estuary. The uppermost 6.7 miles of the Channel is concrete-lined and travels from West 116th street near I-105 to Vermont Avenue near I-110. All of the stormwater from the Dominguez Channel Watershed ultimately discharges to an outfall off San Pedro Harbor, located approximately 17 miles southeast of LAX, which is under the jurisdiction of LACFCD. The Dominguez Channel, which is off-site and downstream from LAX, and includes runoff from both non-LAWA and LAWA properties, is currently over capacity.

Two separate drainage systems, shown in **Figure 4.7-2**, convey water from the east side of the LAX property to Dominguez Channel: the "Project No. 13" storm drain and the Dominguez Channel Concrete Conduit, which divides the Project Area into northern and southern drainage areas, respectively. The Project No. 13 storm drain captures runoff from the northern portions of the Dominguez Channel drainage basin, and conveys the runoff parallel to the concrete conduit under 116th Street until the Project No. 13 storm drain joins the Dominguez Channel Concrete Conduit.

The current capacity of the storm drainage infrastructure in the Dominguez Channel Watershed was investigated in previous hydrologic analysis.[18] That study indicated that the current drainage system within the Dominguez Channel Watershed is not sufficient to convey peak runoff rates associated with the LACDPW 50-year design storm. Specifically, previous studies indicate that the section of the Project No. 13 storm drain along La Cienega Boulevard between 104th Street and 111th Street is inadequately sized to convey the LACDPW 50-year design storm.

The Project area is primarily located within the North Dominguez Channel Watershed. A small portion of the Project area is situated to the west of the Dominguez Channel Watershed, extending into the Argo and Imperial watersheds. These areas of the Argo and Imperial watersheds are located within the CTA, which consists of mostly existing impervious surfaces. Thus, based on the land use changes for the proposed Project, potential drainage and water quality impacts occurring within the Dominguez Channel Watershed were assessed. The impervious and pervious areas for the Dominguez Channel Watershed areas were identified based on aerial photographs taken in October 2015 for the region and are shown in **Figure 4.7-3**.

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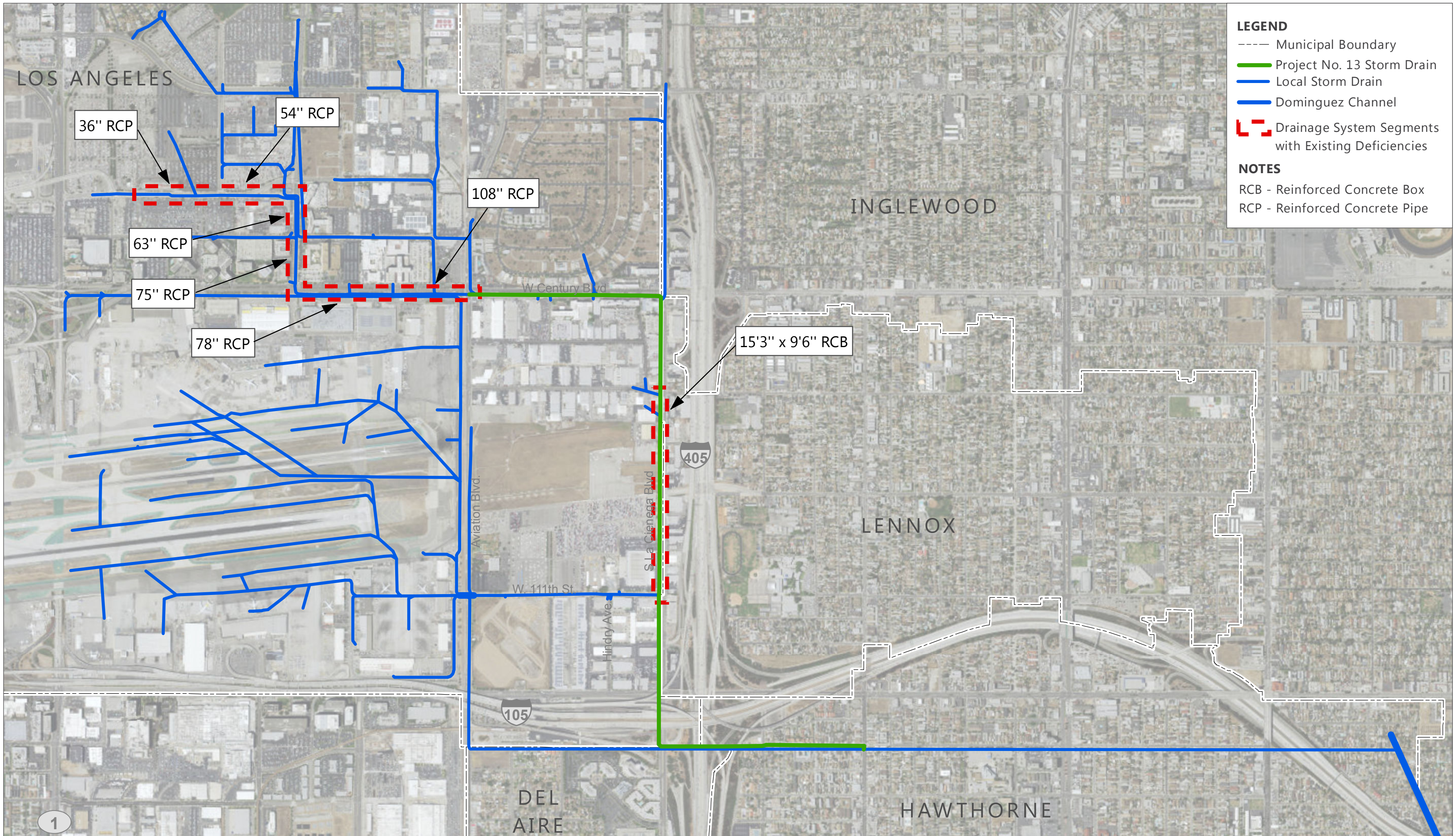
18 Parsons, Brinckerhoff, Quade & Douglas, Inc., *City of Los Angeles, Los Angeles World Airports, Final On-Site Hydrology Report for Los Angeles International Airport,* October 18, 2002.



SOURCES: Los Angeles County, 2010 (city boundary); Ricondo & Assoicates, Inc., 2010 (airport property boundary); National Geographic World Map, ESRI Database, 2011; Meridian Consultants, LLC, May 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-2

NORTH 0 2,000 ft.

Existing Drainage System

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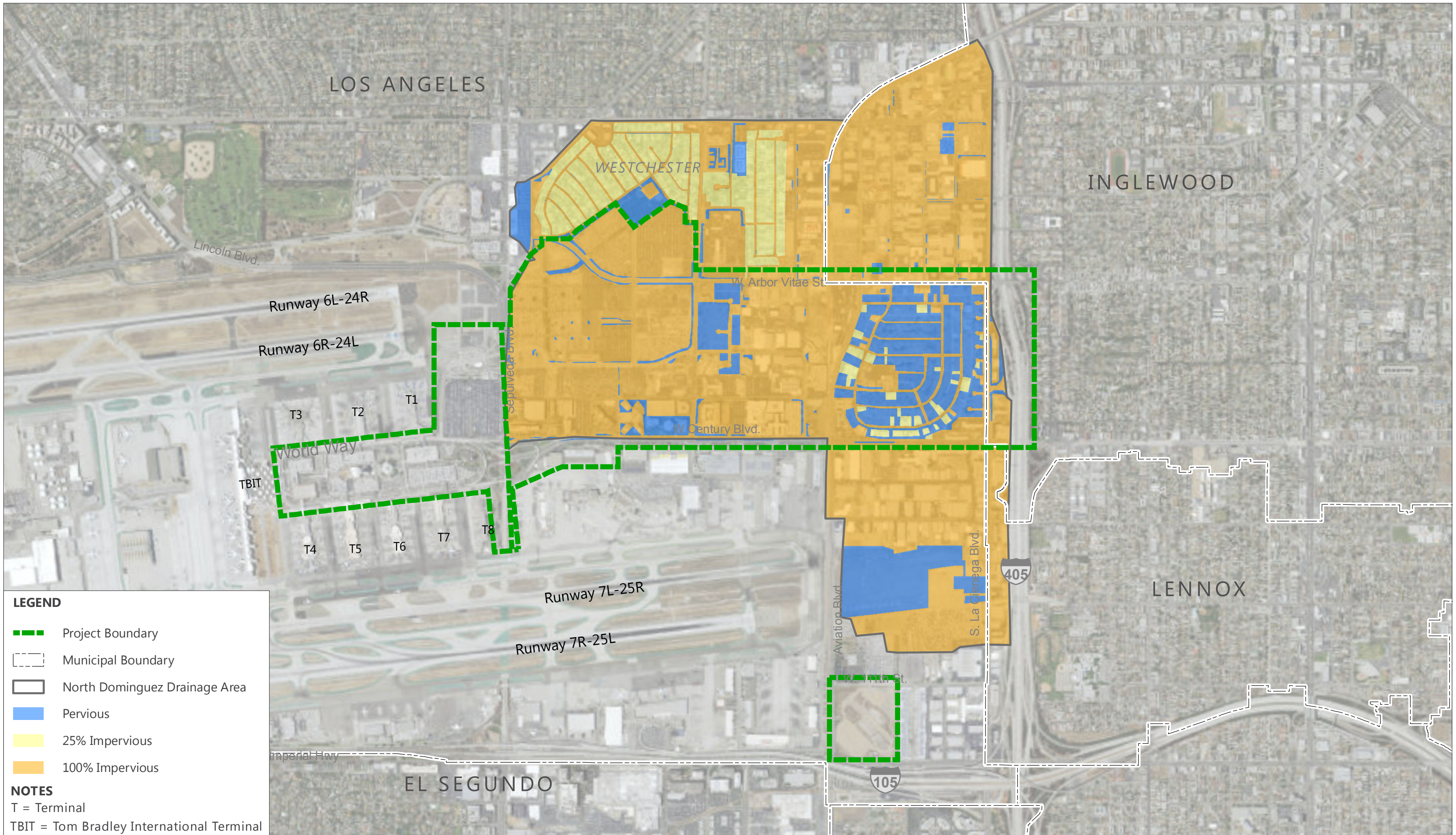

SOURCES: Los Angeles County, 2010 (city boundary); Ricondo & Assoicates, Inc., 2010 (airport property boundary); National Geographic World Map, ESRI Database, 2011; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-3

NORTH 0 2,500 ft.

Existing Project Site Pervious and Impervious Areas

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Streets, parking lots, and buildings were considered 100 percent impervious, while street medians and areas of grass or vegetation are considered pervious. Low-density housing is located in the northwest corner of the Dominguez North Drainage Area, which would include the areas proposed for the Consolidated Rental Car Facility (CONRAC) and Intermodal Transportation Facility (ITF) East; these areas have an existing impervious value of 22 and 14 percent, respectively. However, most of the existing land use in the CONRAC and ITF East area was voluntarily acquired and demolished and is now open space, leading to existing runoff conditions comprised mainly of total suspended solids (TSS) such as dirt and gravel. A summary of these impervious areas are shown in **Table 4.7-3**.

Table 4.7-3: Existing Project Site Imperviousness – Dominguez Channel Sub-Basin

PROJECT AREA	TOTAL DRAINAGE AREA	AREA 100% IMPERVIOUS (ACRES)	AREA 25% IMPERVIOUS (ACRES)	AREA PERVIOUS (ACRES)	COMPOSITE PERCENT IMPERVIOUS
CONRAC	75	22	3	50	30%
ITF East	32	14	4	14	47%
ITF West	71	69	0	2	97%
APM Maintenance and Storage Facility (MSF)	20	7	0	13	35%
Roadway near South Airfield	34	5	0	29	15%

SOURCE: CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., April 2016.

4.7.3.3 Existing Water Quality

A list indicating which pollutants are priorities for each water body, called a 303(d) list, has been developed by the State of California, and is updated and re-adopted on a regular basis. The 303(d) list indicated both non-point and point sources of pollution degrade water quality of Santa Monica Bay and Dominguez Channel.[19] The Santa Monica Bay and the Dominguez Channel Watersheds are the primary receiving water bodies for runoff from LAX. At LAX, the watershed boundary for these two receiving water bodies is located generally along Sepulveda Boulevard, with areas west of Sepulveda Boulevard draining to the Santa Monica Bay and areas east draining to Dominguez Channel.

4.7.3.3.1 Santa Monica Bay Watershed

The Santa Monica Bay Watershed encompasses approximately 575 square miles (368,153 acres) of area in the Los Angeles region. The overall area covered by the Imperial Drainage Sub-Basin represents approximately

[19] California Environmental Protection Agency, State Water Resources Control Board, *2010 Integrated Report, Combined California 2010 303(d) list (Categories 4a, 4b and 5),* USEPA Final Approval October 11, 2011, Available: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

1,300 acres or less than 1 percent of the Santa Monica Bay Watershed. The Santa Monica Bay includes twenty pollutants of concern, as presented in **Table 4.7-4**. Ten of these pollutants were identified as potential stormwater runoff from LAX, and include TSS, phosphorous, Kjeldahl nitrogen (TKN), copper, lead, zinc, biochemical oxygen demand (BOD), chemical oxygen demand (COD), oil and grease, and pathogenic bacteria (fecal coliform, fecal enterococcus, and coliform bacteria), as well as trash and debris.

4.7.3.3.2 Dominguez Channel

The Dominguez Channel collects stormwater from a 46,000-acre watershed before ultimately discharging into San Pedro Harbor. Runoff from LAX into the Dominguez Channel Sub-Basin encompasses approximately 1,100 acres or 2.4 percent of the overall Dominguez Channel Watershed. Regionally, urban and industrial land uses comprise most of the Dominguez Channel Watershed. Water quality in the Dominguez Channel is affected by several point and nonpoint sources of contamination. Water quality data collected from 1993 to 2013 in the Dominguez Channel show that aluminum, zinc, and copper concentrations were found to be approximately 25 times the annual average Numeric Action Level (NAL).[20] Maximum total coliform and fecal coliform concentrations were about 15 times the TMDL targets, whereas maximum enterococcus concentrations were more than 50 times the TMDL targets. The maximum observed concentrations of oil and grease, BOD, and COD also exceeded NALs and may be a pollutant of concern in certain years.

A final report by the Dominguez Channel Watershed Management Area Group also reported exceedances in dissolved metals from water quality assessments during the period of 2002 to 2013.[21] This report also noted exceedances in dissolved metals hardness-adjusted California Toxics Rule (CTR) criteria for copper, lead, and zinc in wet-weather samples. High levels of bacteria concentrations and pH values above the Basin Plan objectives were also observed. The estuarine portion of Dominguez Channel showed adverse impacts to benthic communities with 3 of 5 stations classified as being in poor condition.

Existing activities at LAX and surrounding areas generate pollutants that runoff to Dominguez Channel, which can contribute to exceedances in water quality standards. Runoff is characterized into two major sources of water: dry-weather flows and wet-weather flows. Wet-weather flows occur as a result of rainfall events. Dry-weather flows at the Airport, although minimal, originate from outdoor maintenance of aircraft and vehicles, building and grounds maintenance, aircraft and ground vehicle fueling, painting, stripping, washing, and chemical and fuel transport and storage. In addition to being components of dry-weather flows, heavy metals, such as copper, zinc, and lead may exist in wet-weather flows that drain to the Dominguez Channel. Construction activities at the Airport may also generate pollutant sources that adversely affect water quality, including erosion-induced sediments, nutrients, trace metals, toxic chemicals, and construction waste.

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20 CDM Smith, *LAX Stormwater Management Plan Existing Conditions Assessment,* February 2, 2015.

21 Dominguez Channel Watershed Management Area Group, *Coordinated Integrated Monitoring Program for the Dominguez Channel Watershed Management Area Group, City of Los Angeles, Bureau of Sanitation, TOS S55C Enhanced Watershed Management Program (EWMP) for the Dominguez Channel Watershed Management Group*, revised December 11, 2015.

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Table 4.7-4 (1 of 2): Santa Monica Bay and Dominguez Channel - Pollutants of Concern

POLLUTANT OF CONCERN	DESCRIPTION	REASON	REASONABLE LIKELIHOOD TO BE PRESENT: SANTA MONICA BAY WATERSHED	REASONABLE LIKELIHOOD TO BE PRESENT: DOMINGUEZ CHANNEL
DDT	Pesticide, not been manufactured since 1985	Sediments previously exposed to DDT could be exposed by construction activities		
Silver	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant		
Chromium	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant		
Chlorine	Inorganic substance	Used as an antifouling agent and as a disinfectant in a wide range of industrial and domestic activities		
Cadmium	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant		
PCBs	Banned since 1976	Soils previously contaminated by PCBs could be exposed by grading and construction activities		
Zinc	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant	x	x
Copper	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant	x	x
Biological Oxygen Demand (BOD)	The amount of biologically degradable organic matter that has the potential to reduce the dissolved oxygen content of a body	Represents oxygen-demanding pollutants. Listed as pollutants in the Industrial NPDES permit for airport facilities.	x	x
Chemical Oxygen Demand (COD)	Similar to BOD but accounts for organic compounds that are not biodegradable.	Represents oxygen-demanding pollutants. Listed as pollutants in the Industrial NPDES permit for airport facilities.	x	x

Table 4.7-4 (1 of 2): Santa Monica Bay and Dominguez Channel - Pollutants of Concern

POLLUTANT OF CONCERN	DESCRIPTION	REASON	REASONABLE LIKELIHOOD TO BE PRESENT	
			SANTA MONICA BAY WATERSHED	DOMINGUEZ CHANNEL
Nutrients	Total phosphorus and total Kjeldahl nitrogen (TKL)	Sources include fertilizers, animal and human wastes, automobile emissions, and refrigeration. Listed as pollutants in the Industrial NPDES permit for airport facilities.	x	x
Polycyclic Aromatic Hydrocarbon (PAHs)		Present in crude oil and other refined products, and can also be released during brush and forest fires		
Pathogenic Bacteria and Viruses	Disease-causing organisms	Sources include animal waste, failing septic systems, illicit sewage connections, and boats and marinas.	x	
Lead	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant	x	x
Oil and Grease		Found in urban runoff from roadways, parking lots, and industrial and commercial properties. Listed as pollutants in the Industrial NPDES permit for airport facilities.	x	x
Trash and Debris		Present in runoff, and potential to be swept, blown from surrounding areas	x	x
Chlordane	Insecticide, banned in 1988	Sediments previously contaminated by chlordane could be exposed by construction activities		
Total Suspended Solids	Organic and inorganic particulate matter that is suspended in water	Indicator of the effects of runoff from construction, agricultural practices, logging activities, sewage treatment plant discharges, and other sources. Listed as pollutants in the Industrial NPDES permit for airport facilities.	x	x
Nickel	Heavy metal	Weathered soils, atmospheric deposition, automobile emissions and residuals (brake pad and tire wear), applied chemicals, and industrial and other sources can contribute to this contaminant		
Tri-butyl Tin	Organic form of tin	Found in sources related to boat paint		

SOURCE: *Hydrology and Water Quality Technical Report*, LAX Master Plan EIR-EIS, Camp Dresser & McKee Inc., 2001.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

The Dominguez Channel includes twenty pollutants of concern, as presented in Table 4.7-4. Ten of these constituents have a reasonable likelihood to be present in stormwater runoff from LAX. These include TSS, phosphorus, TKN, copper, lead, zinc, BOD, COD, oil and grease, and pathogenic bacteria, as well as trash and debris.

4.7.3.4 Groundwater

The Project site is within the West Coast Groundwater Basin. Surface recharge of groundwater normally occurs when precipitation or surface water runoff contacts pervious surfaces and infiltrates through the subsurface to replenish groundwater in aquifers below. However, groundwater replenishment in the West Coast Basin is predominantly through injection wells that are part of seawater intrusion barrier systems.

Groundwater occurs beneath LAX, at approximately 100 feet below the ground surface, within what is known as the West Coast Groundwater Basin. Water levels are highest along the West Coast Basin seawater intrusion barrier, and decrease to the east where they are at their lowest elevation in the City of Gardena between the Charnock fault and Newport-Inglewood Uplift, both of which are geologic structural features that partially restrict groundwater flow.[22] The central and western portions of the Project site have a groundwater depth of approximately 88 to 100 feet deep; the eastern portion of the Project site, adjacent to the I-405, has a groundwater depth of approximately 55 to 88 feet below the ground surface.[23]

To characterize the components that contribute to the groundwater supplies in the West Coast Groundwater Basin, a water budget was developed as part of a water management study of the West Coast Groundwater Basin Barrier Project by the West Basin Municipal Water District. Based on this water budget, 6,700 acre-feet/year (AFY) of groundwater inflows to the West Coast Groundwater Basin are attributed to surface recharge, which represents approximately 13 percent of the total estimated inflows.[24] Sources for surface recharge include precipitation, surface water streams, irrigation water from fields and lawns, industrial and commercial wastes, and other applied surface waters. Within the LAX area, there are no surface water streams and industrial and commercial waste discharges are prohibited on the Airport.[25] Sources for recharge at the Airport property itself include precipitation and its associated runoff, and applied irrigation.[26]

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22 Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

23 Ninyo & Moore, *Preliminary Geotechnical Evaluation Pile Foundations, Landside Access Modernization Program, Los Angeles International Airport, Los Angeles, California*, January 29, 2016.

24 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, Section 5.3, Hydrology/Water Quality*, (SCH 2008121080), September 2009.

25 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* Section 4.7, p. 4-759, (SCH 1997061047), April 2004.

26 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* Section 4.7, p. 4-759, (SCH 1997061047), April 2004.

The estimated surface recharge volume within the West Coast Groundwater Basin is approximately 6,700 AFY, and the total pervious area within the Basin is estimated at 28,271 acres.[27] Using these figures, the estimated recharge rate through the pervious surfaces of the Basin is approximately 0.24 AFY per pervious acre.[28] Within the Airport's overall hydrology and water quality study area, pervious surfaces are estimated to provide 171 AFY of surface recharge, or approximately 0.3 percent of the total inflows estimated for the West Coast Groundwater Basin.[29] As discussed previously, approximately 124 acres of the 232-acre Project site is currently comprised of impervious surface area, leaving 108 acres of the Project site covered with pervious surface area. Based on the above figures, existing recharge associated with the Project site is currently approximately 25.92 AFY, or less than 0.04 percent, of total annual West Coast Groundwater Basin surface inflows.

Based on the 2013-2014 Regional Groundwater Report, water levels did not change significantly over most of the coastal area of the Basin. However, water levels decreased up to 2 feet in the Carson and Dominguez Gap areas, and decreased over 20 feet in the Inglewood/Gardena area.[30]

4.7.4 THRESHOLDS OF SIGNIFICANCE

4.7.4.1 Hydrology

A significant hydrology impact would occur if the proposed Project would result in one or more of the following:

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.
- Result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow.
- An increase in runoff that would cause or exacerbate flooding with the potential to harm people or damage property.
- Substantial alteration of the existing drainage pattern of the site in a manner which would result in substantial erosion or siltation on- or off-site.

These thresholds are based on the *L.A. CEQA Thresholds Guide*[31] and Appendix G of the State CEQA Guidelines.

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27 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, Section 5.3, Hydrology/Water Quality,* (SCH 2008121080),September 2009.

28 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, Section 5.3, Hydrology/Water Quality,* (SCH 2008121080), September 2009.

29 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* Section 4.7, p. 4-759, (SCH 1997061047), April 2004.

30 Water Replenishment District of Southern California, *Regional Groundwater Monitoring Report Water Year 2013-2014,* February 2015.

31 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

4.7.4.2 Water Quality

A significant water quality impact would occur if the proposed Project would:

- Create pollution, contamination or nuisance as defined in Section 13050 of the California Water Code or that cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body.

This threshold is based on guidance contained in the *L.A. CEQA Thresholds Guide*.

4.7.4.3 Groundwater

A significant groundwater impact would occur if the proposed Project would:

- Cause substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.

This threshold is based on Appendix G of the State CEQA Guidelines.

4.7.5 IMPACT ANALYSIS

4.7.5.1 LAX Landside Access Modernization Program Project

4.7.5.1.1 Hydrology

Project features associated with each of the major Project components are discussed below; the changes in impervious surfaces by the year 2035 are summarized in **Table 4.7-5**. Drainage areas for each of the main Project components where pervious surfaces are being converted to impervious surfaces are identified in **Figure 4.7-4**. The changes in drainage areas for the main Project components included the respective facilities as well as the roadway improvements proposed in the vicinity of each facility. In addition to the roadway improvements proposed near the major components, the impact analysis also included Project-related roadway improvements, as well as the APM guideway, located in the other areas of the Project site, as further described below.

Table 4.7-5: Future Project Site Imperviousness

PROJECT AREA	PROJECT CONDITION	TOTAL DRAINAGE AREA	AREA 100% IMPERVIOUS (ACRES)	AREA 25% IMPERVIOUS (ACRES)	AREA PERVIOUS (ACRES)	COMPOSITE PERCENT IMPERVIOUS
CONRAC	Existing	75	22	3	50	30%
	Future (2035)	75	72	0	3	96%
ITF East	Existing	32	14	4	14	47%
	Future (2035)	32	27	0	5	84%
ITF West	Existing	71	69	0	2	97%
	Future (2035)	71	70	0	1	99%
APM MSF	Existing	20	7	0	13	35%
	Future (2035)	20	11	0	9	55%
New Roadways	Existing	34	5	0	29	15%
	Future (2035)	34	7	0	27	20%

SOURCE: CDM Smith., 2016 - Refer to Appendix L
PREPARED BY: Ricondo & Associates, Inc., March 2016.

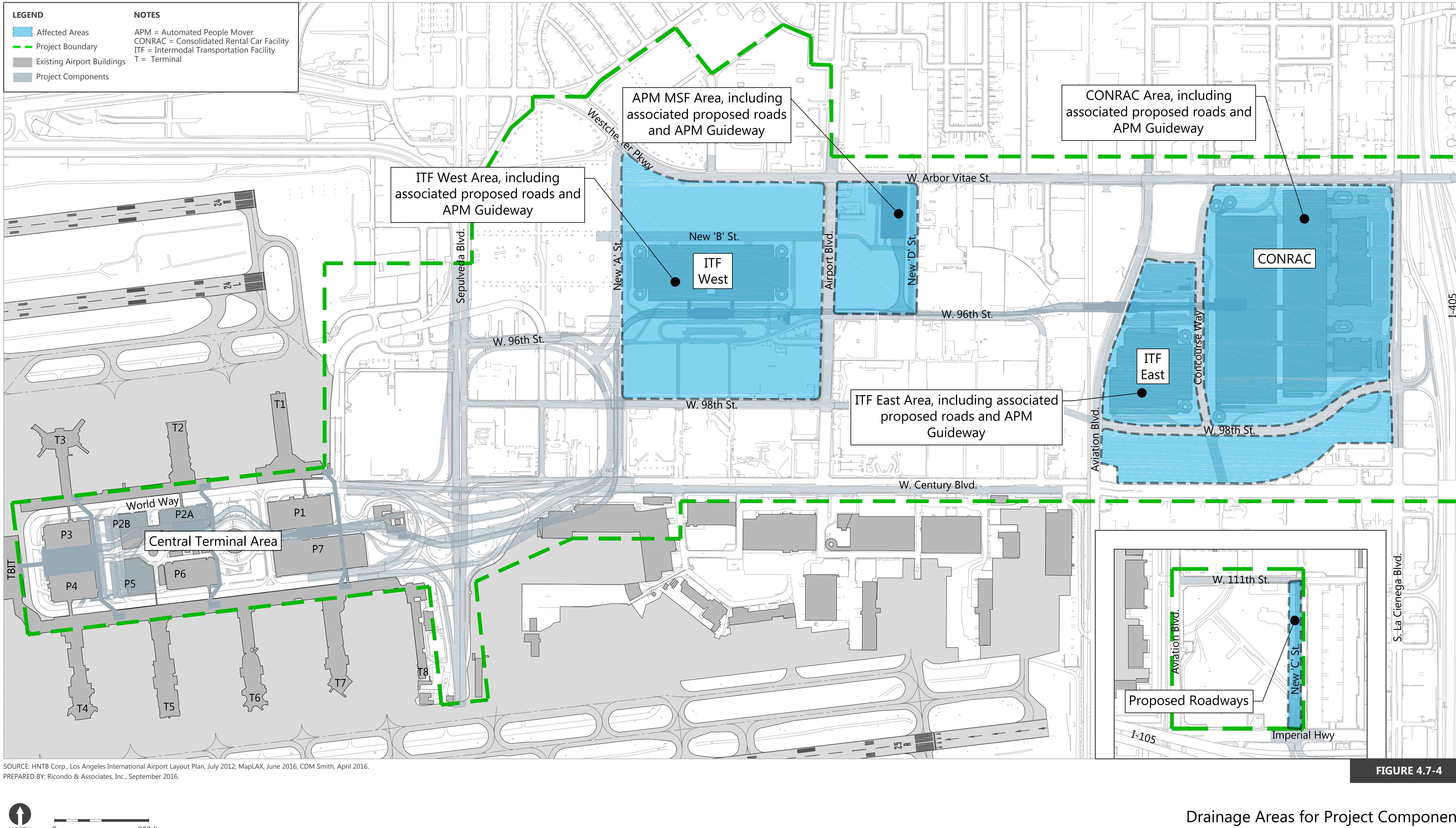
Automated People Mover

The APM power stations and guideway would be constructed almost entirely over existing impervious surfaces. Runoff from the stations and guideway in the drainage areas identified for each of the proposed Project components discussed below has been integrated into the runoff calculations for those elements.

The APM Maintenance and Storage Facility (MSF) would be constructed on a mostly vacant lot, located on the south side of W. Arbor Vitae Street, which consists of multi-family and commercial land uses in the northwest corner. The APM MSF would cover approximately 7.3 acres with a building footprint of approximately 95,000 square feet. The increase in impervious surface in the APM MSF area is 4 acres or 20 percent, which would result in a net increase in peak flow rates to be conveyed by the drainage systems serving these areas.

Consolidated Rental Car Facility

The approximately 69-acre CONRAC would be constructed on a mostly open space site known as Manchester Square, located at the southwest corner of W. Arbor Vitae Street and S. La Cienega Boulevard. The CONRAC would have a footprint of approximately 2.1 million square feet. Components of the CONRAC would include the Customer Service Building, Rental Car Ready/Return Parking Area, Quick Turnaround Area (QTA), QTA Support and Additional Site Functions, Idle Storage Area, employee and visitor's parking, bus plaza, and APM station. The impervious area would increase by 50 acres or 66 percent and would result in a net increase in peak flow rates to be conveyed by the drainage system serving these areas.



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-4

Drainage Areas for Project Components

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Intermodal Transportation Facility East

The approximately 22-acre ITF East would be constructed on a mostly open space site adjacent to Aviation Boulevard between W. 96th Street and W. 98th Street. The main components of the ITF East include an APM station, an adjacent and interconnected public parking structure, a commercial vehicle curb, and internal circulation roads. The impervious area would increase by 13 acres or 37 percent. These increases would result in a net increase in peak flow rates to be conveyed by the drainage systems serving these areas.

Intermodal Transportation Facility West

The ITF West would be constructed on a 62-acre area that consists of existing parking areas and would result in a negligible increase in impervious surface areas and associated runoff, but a detention volume would be required due to the rerouted drainage patterns in this area. The approximately 33-acre ITF West would be constructed in an area bound by W. 96th Street to the south, Airport Boulevard to the east, Westchester Parkway/W. Arbor Vitae Street to the north, and extend past Jenny Avenue to the west. Components of the ITF West include an APM station, two new adjacent and interconnected public parking structures, a commercial vehicle curb, and internal circulation roads. The impervious area would increase by 1 acre or 2 percent. This incremental increase in impervious areas would result in a net increase in peak flow rates to be conveyed by the drainage systems serving these areas.

Roadways

Proposed roadway improvements include improvements to the southbound I-405 ramps at La Cienega Boulevard, extension of W. 98th Street between S. La Cienega Boulevard and Aviation Boulevard, the new 'A' Street, roadway improvements connecting World Way, Century Boulevard, W. 96th Street, and Sepulveda Boulevard, and roadway improvements within the CTA. Such improvements include new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, new or realigned driveways, roadway closures, streetscape improvements, landscaping, and intersection improvements. Runoff associated with these roadway improvements, conservatively estimated to total approximately 40 acres, has been included in the calculations for the proposed Project component areas discussed above.

Proposed roadway improvements also include improvements to the I-105/Aviation Boulevard/Imperial Highway ramps and the construction of a new road between Imperial Highway and 111th Street. The increase in impervious surface associated with these roadway improvements is 2 acres or 5 percent, which would result in a net increase in peak flow rates to be conveyed by the drainage systems serving these areas. The following analysis addresses changes in peak flow rates for drainage after completion of the proposed Project, inclusive of the Project improvements proposed in both Phases 1 and 2. Drainage impacts were determined based on changes in land use and site grading as opposed to building footprint.

Peak runoff elevations or depths in the storm drain system for the 10-year design storm were assessed for future Project conditions as well as the on-site storage volumes needed to maintain existing downstream peak depths, which are summarized in **Table 4.7-6**. These calculations were made to determine the capacity of the existing storm drain system and to determine how much on-site storage is required to prevent flooding downstream. The estimated volume of stormwater detention that would be required for each project component to maintain existing downstream peak depths is identified. Peak runoff depths in storm drains downstream that exceed existing drainage system peak depths for the 10-year storm are considered significant impacts as they may cause surface flooding. Storm drainage systems that cannot achieve 10-year capacity are considered deficient.

Table 4.7-6: Project-Related 10-Year Storm Peak Depths

COMPONENT	EXISTING DOWNSTREAM PEAK DEPTH (FEET)	FUTURE DOWNSTREAM PEAK DEPTH (FEET)	DIFFERENCE IN PEAK DEPTH (FEET)	DETENTION VOLUME REQUIRED (ft^3)
CONRAC	4.44 (to the north) 12.81 (to the south)	6.28 (to the north) 15.13 (to the south)	+1.8 (to the north) +2.32 (to the south)	571,000
ITF East	9.57	12.04	+2.47	200,000
ITF West	12.41 (to the south) 12.45 (to the east)	12.80 (to the south) 12.87 (to the east)	+0.39 (to the south) +0.42 (to the east)	94,000
APM MSF	5.21	7.67	+2.46	23,000
Roadways	1.39	1.39	0.00	0

NOTE: ft^3 = cubic feet

SOURCE: CDM Smith., 2016 - Refer to Appendix L.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

As shown in Table 4.7-6, additional flow attributed to the proposed Project adds to an already surcharged condition in the Dominguez Channel Watershed described above. Thus, the proposed Project would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and the impact would be significant. This impact would also be significant because the proposed Project would cause or exacerbate flooding with the potential to harm people or damage property.

The proposed Project would alter and redirect stormwater flows through portions of the Project area; however, the proposed Project would not result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow. Stormwater discharges to existing drainage features would continue similar to existing conditions. Thus, the proposed Project would not have a significant impact on the movement of surface water because it would not cause a substantial change in the current or direction of water flow.

The proposed Project would not cause substantial alteration of the existing drainage pattern of the Project site in a manner which would result in substantial erosion or siltation on- or off-site. Regarding construction impacts, as required under the SWRCB General Permit for Construction Activities, LAWA has prepared stormwater BMP guidance instructions in the Design and Construction Handbook applicable to airport improvement projects.[32] This document outlines the procedures for preparing and implementing a

[32] City of Los Angeles, Los Angeles World Airports, *Design and Construction Handbook,* June 2011.

construction SWPPP before beginning any construction operations so that the activities are in compliance with the general permit, and so that siltation and erosion impacts are minimized. One or more of these requirements, as relevant to the specific project component, would be incorporated into each project-specific SWPPP:

- Soil stabilization (erosion control) techniques such as seeding and planting, mulching, and check dams
- Sediment control methods such as detention basins, silt fences, and dust control
- Contractor training programs
- Material transfer practices
- Waste management practices such as providing designated storage areas and containers for specific waste for regular collection
- Roadway cleaning/tracking control practices
- Vehicle and equipment cleaning and maintenance practices
- Fueling practices

All facilities receiving and conveying stormwater from the Airport would be below ground pipe or concrete-lined. As such any increases in stormwater peak flow rates or changes in the drainage infrastructure would not result in substantial erosion or siltation. Adherence to the SWPPP and implementation of standard BMPs during construction of the proposed Project would assure that construction-related siltation and erosion impacts, as well as other water quality impacts from construction runoff, would be less than significant.

4.7.5.1.2 Water Quality

Project Construction

Site clearing and grading operations have the greatest potential for discharging sediment and pollutants downstream during storm events. Construction and grading activities would involve earth movement and the use of heavy construction equipment. Peak stormwater runoff could result in short-term sheet erosion with areas of exposed or stockpiled soils. Additionally, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase runoff and erosion potential.

The Project would be required to develop a site-specific SWPPP in accordance with the NPDES Program General permits authorized under the CWA for construction activities. As required under the SWRCB General Permit for Construction Activities, LAWA has prepared stormwater BMP guidance instructions in the Design and Construction Handbook applicable to airport improvement projects.[33] This document outlines the procedures for preparing and implementing a construction SWPPP before beginning any construction activities so that the activities are in compliance with the general permit, and water quality impacts are

[33] City of Los Angeles, Los Angeles World Airports, *Design and Construction Handbook,* June 2011.

minimized. These requirements, which would be incorporated into each project-specific SWPPP as appropriate, include:

- Soil stabilization (erosion control) techniques such as seeding and planting, mulching, and check dams
- Sediment control methods such as detention basins, silt fences, and dust control
- Contractor training programs
- Material transfer practices
- Waste management practices such as providing designated storage areas and containers for specific waste for regular collection
- Roadway cleaning/tracking control practices
- Vehicle and equipment cleaning and maintenance practices
- Fueling practices

Adherence to the site-specific SWPPP and implementation of standard BMPs during construction would assure that discharges of pollutants of concern to a receiving water body by surface water runoff would be minimized. Thus water quality impacts from implementation of the proposed Project would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water would be minimized.

Project Operation

LAWA is undertaking development of a comprehensive Stormwater Management Plan (SMP) that addresses both stormwater drainage and water quality issues. The SMP would evaluate all tributary basins and new Project components impacting the Airport property, while addressing updated regulatory requirements related to stormwater runoff. The SMP would update water quality compliance strategy that addresses recent regulatory changes including LID ordinance requirements, NPDES, MS4, General Industrial, Construction Permits, and TMDL implementation requirements for Santa Monica Bay and Dominguez Channel. The SMP would build upon the existing foundation of the 2005 Conceptual Drainage Plan (CDP)[34] and would include additional and recent data, updated Project design concepts, and measures to address recent regulatory changes in response to the impacts of recent and planned improvements at LAX. In addition, the SMP would also take into account any new drainage infrastructure and BMPs that have been incorporated in recently designed or completed improvement projects at LAX.

Dry Weather

Sources of dry-weather flow within the Project area are associated with activities that include outdoor cleaning and maintenance of rental vehicles; maintenance of the APM system and equipment; and building and grounds maintenance. These activities would result in an increase in the source of pollutants (listed in

34 City of Los Angeles, Los Angeles World Airports, *Los Angeles International Airport Conceptual Drainage Plan*, June 2005.

Table 4.7-4) within the Project area and receiving water bodies. However, measures under the SWPPP, existing NPDES General Industrial Permit and existing MS4 Permit would be implemented and periodically updated as necessary to reflect the current conditions and level of activity to prevent or minimize the introduction of pollutants and discharge of dry weather flows. As such, impacts related to water quality during dry-weather discharge conditions would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized.

Wet Weather

Wet-weather runoff from the proposed development areas would result in an increase in pollutant loads that are discharged to the Dominguez Channel North Sub-Basin and downstream to receiving waters. As stated in Section 4.7.5.1.1, changes to the land cover from the development of the CONRAC and ITF East facilities would reduce open space/pervious area by 63 acres, resulting in an increase in impervious areas and contaminant load in surface water runoff. Similarly, development of the ITF West, APM facilities, and associated roadways would increase impervious surfaces and decrease infiltration within the Project area. **Table 4.7-7** identifies the pollutant loads for existing and future (year 2035) conditions for the different drainage areas. Pollutant loads discharged to Dominguez Channel by surface water runoff would increase. As shown in Table 4.7-7, the most substantial increases resulting from implementation of the proposed Project would be for oil and grease, lead, zinc, and ammonia. The conversion of open space/pervious area to transportation land use for the development of the ITF West would increase contaminant loads for all constituents except for TSS when compared to existing conditions. Development of the APM MSF would also convert open space to industrial and transportation use, thus impacting surface runoff and water quality. Pollutant loads discharged to the Dominguez Channel by surface water runoff would increase, particularly oil and grease, lead, zinc, and ammonia, during Project operation.

As part of the update to the existing CDP for LAX, LAWA would integrate the applicable BMP requirements related to the SUSMP and the City's LID Ordinance. The stormwater LID Ordinance requires 100 percent of rain water from a 0.75-inch rainstorm to be completely captured, infiltrated, and/or used on-site for development and redevelopment projects using capture methods and BMPs. The SUSMP BMP design criteria require a retention volume to the 0.75 inch, 24-hour rain event or the 85th percentile, 24-hour rain event. The overall BMP program for the proposed Project would be sized to meet the LID specifications relative to addressing runoff volumes for the 85th percentile storm event. **Table 4.7-8** presents the runoff volumes associated with the 85th percentile storm event that would be addressed in the BMP program for each Project component.

The SUSMP requires that redevelopment projects that create, add, or replace 5,000 square feet or more of impervious area on developed sites are subject to the same conditions as new development projects. As such, the water quality volumes presented in Table 4.7-8 were determined by assuming all new development are fully impervious.

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Table 4.7-7: Existing and Future (2035) Pollutant Runoff Loads (pounds/year)

DRAINAGE AREA	TSS	TOTAL PHOS-PHORUS	TKN	TOTAL COPPER	TOTAL LEAD	TOTAL ZINC	OIL AND GREASE	BOD	COD	AMMONIA	FECAL COLIFORM (MPN)	FECAL ENTERO-COCCUS (MPN)
CONRAC												
Existing	9,503	16	77	1.94	0.22	8	58	953	1,859	13	2.90E+13	3.06E+12
Future	12,025	64	409	7	2.29	40	484	3,715	11,388	120	2.96E+14	4.11E+13
Percent change	26.5%	306.9%	432.9%	279.2%	934.6%	401.8%	733.3%	289.9%	512.7%	791.0%	923.7%	1,245.8%
ITF East												
Existing	4,469	10	71	1	0	6	53	685	1,892	20	3.40E+13	5.00E+12
Future	5,700	24	104	3	1	15	157	1,177	2,694	16	7.58E+13	7.40E+12
Percent change	27.5%	127.6%	45.7%	161.3%	57.0%	154.9%	198.7%	71.9%	42.4%	-20.9%	123.1%	47.9%
APM MSF												
Existing	2,746	5	26	1	0	2	21	301	670	6	1.24E+13	1.69E+12
Future	3,979	8	41	1	0	6	39	443	1,045	7	2.19E+13	3.34E+12
Percent change	44.9%	73.7%	56.8%	67.1%	96.2%	160.5%	88.5%	47.1%	55.9%	11.5%	76.1%	97.8%
ITF West												
Existing	12,205	65	281	8	1	43	454	3,124	7,389	43	2.19E+14	2.13E+13
Future	12,111	67	289	9	1	44	469	3,195	7,587	44	2.26E+14	2.20E+13
Percent change	-0.8%	2.6%	2.5%	2.6%	3.3%	3.0%	3.3%	2.3%	2.7%	2.5%	3.3%	3.2%
All Drainage Facilities												
Existing	28,923	96	456	12	2	59	585	5,063	11,810	83	2.94E+14	3.10E+13
Future	33,815	162	842	20	4	106	1,149	8,530	22,714	187	6.20E+14	7.39E+13
Percent change	16.9%	69.4%	84.8%	65.9%	114.7%	78.8%	96.3%	68.5%	92.3%	125.7%	110.8%	137.9%

NOTE: MPN = Most Probable Number

SOURCE: CDM Smith., 2016 - Refer to Appendix L.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

Table 4.7-8: Runoff Volume for the 85th Percentile Storm

PROJECT COMPONENT	TOTAL AREA (ACRES)	VOLUME (ft^3)
CONRAC	67	220,000
ITF East	21	70,000
ITF West	14	45,000
APM MSF	2.2	7,000
Roads	39	130,000
APM Guideway	16.5	54,000
New Roadways	1.7	5,600

NOTE: ft^3 = cubic feet

SOURCE: CDM Smith., 2016 - Refer to Appendix L.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

For all Project components, LID BMPs of adequate size, or capture and reuse alternatives, would be incorporated to address the volumes shown in Table 4.7-8. BMPs would be evaluated and selected from those identified in the LID Manual or other equivalent practices. Implementing BMPs as set forth in the LID Ordinance, with the specifics of the BMPs associated with each Project component to be defined in conjunction with the LID/SUSMP compliance process, would minimize water quality impacts during wet-weather conditions. Thus, impacts to water quality associated with operation of the proposed Project associated with increased pollutant loads from Project implementation would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized.

4.7.5.1.3 Groundwater

Construction and operation of the proposed Project would not require the use of groundwater, and thus, would not draw upon groundwater supplies. Construction of the APM, ITFs, and CONRAC foundations would occur at depths up to 100 feet below ground surface (bgs). As discussed above in Section 4.7.3.4, the central and western portions of the Project site have a groundwater depth of approximately 88 to 100 feet deep; the eastern portion of the Project site, adjacent to the I-405, has a groundwater depth of approximately 55 to 88 feet below the ground surface.

As discussed in Section 4.6.1, *Hazardous Materials*, contaminated groundwater may be encountered during foundation construction for the proposed Project. Furthermore, the possibility exists that previously unidentified soil and/or perched groundwater contamination could be encountered during other construction activities during implementation of the proposed Project. However, the handling of any contaminated materials would comply with all applicable local, state, and federal laws to avoid any significant impacts related to contamination of groundwater supplies. Implementation of Standard Control Measures LAX-HM-1 and LAX-HM-2, identified in Section 4.6, *Hazards and Hazardous Materials,* would help ensure construction impacts related to potential interference with ongoing remediation efforts would be minimized.

Although the proposed Project would result in a net increase in impervious areas and an associated decrease in the volume of surface recharge within the Project area when compared to existing conditions, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site because the basin is replenished predominantly through injection wells that are part of the seawater intrusion barrier system.[35]

Therefore, impacts to groundwater supply and recharge would be less than significant because the proposed Project would not cause substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.

4.7.5.2 LAX Landside Access Modernization Program Potential Future Related Development

4.7.5.2.1 Hydrology

The potential future related development of parcels needed for construction laydown staging areas would occur after construction of components of the proposed Project. The parcels identified for potential future related development are located adjacent to the CONRAC, ITF East, APM MSF, and ITF West and could accommodate up to 900,000 square feet of commercial development (see Section 2.7 of Chapter 2, *Description of the Proposed Project*). Additional project-level environmental review would be conducted, as necessary, to determine impacts related to hydrology.

Development of additional land for potential future related development could create or contribute runoff water that could exceed the capacity of existing or planned stormwater drainage systems. As each parcel is proposed for development, the estimated volume of stormwater detention that would be required would need to be identified. Thus, the potential future related development could create or contribute runoff water which could exceed the capacity of existing or planned stormwater drainage systems and the impact would be significant.

The potential future related development could alter and redirect stormwater flows; however, it is unlikely that the potential future related development would result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow. Stormwater discharges to existing drainage features would continue similar to existing conditions. Thus, potential future related development would not have a significant impact on the movement of surface water because it would not cause a substantial change in the current or direction of water flow.

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35 U.S. Department of the Interior & U.S. Geological Survey, *Ground-Water Quality of Coastal Aquifer Systems in the West Coast Basin, Los Angeles County, California, 1999-2002,* pg. 2, 2004.

Development of additional land for potential future related development has could create or contribute runoff water that could cause or exacerbate flooding. As each parcel is proposed for development, the estimated volume of stormwater detention that would be required would need to be identified. Thus, the potential future related development would cause an increase in runoff that would cause or exacerbate flooding with the potential to harm people or damage property and the impact would be significant.

As required under the SWRCB General Permit for Construction Activities, LAWA has prepared stormwater BMP guidance instructions in the Design and Construction Handbook applicable to airport improvement projects.[36] This document outlines the procedures for preparing and implementing a construction SWPPP before beginning any construction operations so that the activities are in compliance with the general permit, and so that siltation and erosion impacts are minimized. One or more of these requirements, as relevant to the specific project, which would be incorporated into each project-specific SWPPP:

- Soil stabilization (erosion control) techniques such as seeding and planting, mulching, and check dams
- Sediment control methods such as detention basins, silt fences, and dust control
- Contractor training programs
- Material transfer practices
- Waste management practices such as providing designated storage areas and containers for specific waste for regular collection
- Roadway cleaning/tracking control practices
- Vehicle and equipment cleaning and maintenance practices
- Fueling practices

Adherence to the SWPPP and implementation of standard BMPs during construction of potential future related development would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant.

4.7.5.2.2 Water Quality

As discussed previously, the parcels proposed for future related development could accommodate up to 900,000 square feet of commercial development. The potential future related development would be required to adhere to the same measures required for the Landside Access Modernization Program Project under the SWPPP, the existing NPDES General Industrial Permit, and the existing MS4 Permit, to prevent and minimize introduction of pollutants and discharge to receiving water bodies. As such, impacts related to water quality associated with the potential future related development would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory

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[36] City of Los Angeles, Los Angeles World Airports, *Design and Construction Handbook,* June 2011.

standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized.

4.7.5.2.3 Groundwater

As discussed previously, the parcels proposed for future related development could accommodate up to 900,000 square feet of commercial development. Similar to the proposed Project, construction and operation would not require the use of groundwater, and thus, would not deplete groundwater supplies. Although potential future related development would result in a net increase in impervious areas and an associated decrease in the volume of surface recharge within the Project area when compared to existing conditions, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site because the basin is replenished predominantly through injection wells that are part of the seawater intrusion barrier system.[37] Therefore, impacts to groundwater supply and recharge would be less than significant because the potential future related development would not cause substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.

4.7.6 CUMULATIVE IMPACTS

4.7.6.1 Hydrology

The proposed Project would be developed in an urbanized area and runoff from the Project site and the surrounding area would be served by existing storm drain systems. Runoff from the Project site and surrounding urban uses is typically directed into the adjacent streets, where it flows to the nearest drainage improvements. It is likely that most, if not all, of the cumulative development projects would also drain to the surrounding street system.

As stated previously, the Project site is located mostly within the Dominguez Channel Watershed, extending into the Argo and Imperial watersheds. These watersheds include both County of Los Angeles and City of Los Angeles drainage and flood control structures and are composed of mainly urban, commercial, and industrial uses. Cumulative development would be unlikely to substantially alter the existing drainage pattern of the area; however, without provision of additional detention facilities to accommodate any increase in stormwater flows caused by the proposed Project or cumulative development projects, increased flooding, or the exceedance of existing or planned stormwater drainage systems may occur. Thus, cumulative impacts to capacity of existing or planned stormwater drainage systems and/or flooding would be significant and the proposed Project’s contribution would be cumulatively considerable.

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[37] U.S. Department of the Interior & U.S. Geological Survey, *Ground-Water Quality of Coastal Aquifer Systems in the West Coast Basin, Los Angeles County, California, 1999-2002,* pg. 2, 2004.

Given that the development patterns in the area have been established, it is unlikely that there would be a substantial alteration of drainage systems and watercourses since the alignment of such facilities have been established and capacities have been determined based on the existing land uses located in those watersheds. In accordance with municipal requirements, cumulative development projects and other future development projects would be required to implement BMPs such that post-development peak stormwater runoff discharge rates would not exceed the estimated pre-development rates. Furthermore, for cumulative projects within the City, the City of Los Angeles Department of Public Works would review each future development project on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available. Consequently, the proposed Project and cumulative development projects would not result in a significant cumulative impact on the movement of surface water because together they would not cause a substantial change in the current or direction of water flow. Similarly, adherence to the SWPPP and implementation of standard BMPs during construction would assure that the cumulative impacts related to increased siltation, erosion, and hazardous material spills would be less than significant.

4.7.6.2 Water Quality

Implementation of the proposed Project in combination with the cumulative development projects could result in the violation of water quality standards and/or waste discharge requirements during construction and operation. However, each of the cumulative development projects would be subject to the same requirements as the proposed Project and thus, would be required to prepare a LID Plan, and, if applicable, a SWPPP for construction activities. SWPPPs are required if more than one acre is disturbed. As with the proposed Project, the LID Plan and/or SWPPP prepared for the cumulative development projects would incorporate BMPs requiring controls of pollutant discharges that utilize BAT to reduce pollutants. Cumulative development projects within the County of Los Angeles and City of Los Angeles are required to submit and implement a SWPPP and a SUSMP containing design features and BMPs to reduce post-construction pollutants in stormwater discharges. Increases in regional controls associated with other elements of the MS4 Permit also would improve regional water quality over time. Water quality impacts of the cumulative development projects in combination with the proposed Project would be less than significant with preparation and implementation of the SWPPP and SUSMP; compliance with the City's LID Ordinance; and the enforcement of these requirements by the City or County. Therefore, cumulative water quality impacts from implementation of the proposed Project in combination with cumulative development would be less than significant because pollution, contamination or nuisance as defined in Section 13050 of the CWC or violation of regulatory standards as defined in the applicable NPDES stormwater permit or Water Quality Control Plan for receiving water body would be minimized.

4.7.6.3 Groundwater

As discussed, the proposed Project would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or the local groundwater table level. Cumulative development projects, individually and cumulatively would create more impervious surfaces thus reducing the total groundwater recharge area. However, cumulative development projects located within the watershed would add to the local groundwater basin through the addition of imported and/or recycled water. The water used for irrigation could offset the difference in the reduction of groundwater recharge area from rainfall-related recharge that occurs today. Given that the cumulative development projects are located in an urbanized area, any reduction in groundwater recharge resulting from the overall net change in impervious area within the cumulative development project sites would be minimal in the context of the regional groundwater basin.

Additionally, the proposed Project and all cumulative development projects are required to comply with all applicable existing regulations that prevent contamination and must meet regulatory water quality standards. As with the proposed Project, the cumulative development projects would be unlikely to cause or increase groundwater contamination.

Therefore, cumulative impacts to groundwater quality would be less than significant because the proposed Project in combination with cumulative development projects would not cause substantial interference with groundwater recharge such that there would be a net decrease in the aquifer volume or a change in groundwater storage that would adversely affect the quantity, water level, or flow of the underlying groundwater relative to beneficial uses of the basin.

4.7.7 MITIGATION MEASURES

As indicated in Section 4.7.5, hydrology impacts related to stormwater drainage systems and flooding would be significant. The following mitigation measures are proposed to reduce significant impacts on stormwater drainage systems and flooding:

- **MM-HWA (LAMP)-1. Stormwater Management Facilities (Project-Specific). Table 4.7-9** presents the volume of stormwater that would require management to meet the water quality treatment requirement for each proposed Project component, as well as the additional on-site runoff storage/detention that would be needed to fully mitigate peak runoff depth downstream for the 10-year storm event. The design and sizing of drainage system and stormwater quality treatment facilities for the proposed Project shall accommodate those storage requirements. Following Table 4.7-9 is a description of the design provisions for each Project component that meet the storage requirements.

Table 4.7-9: Storage Volume Requirements for On-Site Stormwater Management

LAMP COMPONENT	WATER QUALITY REQUIREMENT (ft^3)	ADDITIONAL DRAINAGE REQUIREMENT (ft^3)	TOTAL (ft^3)
CONRAC	220,000	351,000	571,000
ITF East	70,000	130,000	200,000
ITF West	45,000	49,000	94,000
APM MSF Facility	7,000	16,000	23,000
APM Guideway (entire length)	54,000	New Storm Drains	54,000
New Roadways	130,000	New Storm Drains	130,000

NOTE: ft^3 = cubic feet

SOURCE: CDM Smith, April 2016. - Refer to Appendix L, and Table 4.7-8.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

LAWA shall include the following measures, or functional equivalents, in the design of each component of the proposed Project to reduce Project-specific impacts on stormwater drainage and flooding:

- **CONRAC.** Proposed on-site cisterns will be supplemented to provide an additional 40,000 ft^3 of detention in the north and 31,000 ft^3 of detention in the south ; a detention design depth of 5 feet would necessitate a footprint of 0.2 acre and 0.1 acre on the facility site, respectively (refer to **Figure 4.7-5**).
- **ITF East.** A 1.9-acre site for combined retention and detention will be provided to retain 70,000 ft^3 of runoff for water quality treatment (a 1.3-acre footprint) and detain 130,000 ft^3 to meet developed drainage requirements (a 0.6-acre footprint) at the ITF East facility (refer to **Figure 4.7-6**).
- **ITF West.** A 1.1-acre site for combined retention and detention will be provided to retain 45,000 ft^3 (0.86 acre) of runoff and detain 50,000 ft^3 (0.23 acre) (refer to **Figure 4.7-7**).
- **APM MSF.** A 0.2-acre site for combined retention and detention will be provided to retain 7,000 ft^3 of runoff (0.13 acre) and detain 16,000 ft^3 (0.07 acre) (refer to **Figure 4.7-8**).
- **Roadways and APM Guideway.** For roadways, approximately 2.5 acres of swales will be provided to retain 130,000 ft^3 of runoff. For the APM guideway, approximately 1 acre of surface-level bioretention features will be provided to treat 54,000 ft^3 of runoff (refer to **Figures 4.7-9** and **4.7-10**).

- **MM-HWA (LAMP)-2. Stormwater Management Facilities (Project-Specific).** LAWA shall include the following measures, or functional equivalents, in the design of stormdrain system improvements for the proposed Project to address deficiencies of local drainages:
  - LAWA will construct or support on a fair-share basis, improvements to the existing line with larger diameter lines to address the existing drainage deficiencies within the storm drain line alone 96th Street, Airport Boulevard, and Century Boulevard.
- **MM-HWA (LAMP)-3. Stormwater Management Facilities (Programmatic).** LAWA shall implement the following measures for future related development to reduce impacts on stormwater drainage and flooding:
  - LAWA will use site design and stormwater management to maintain the site's pre-development runoff rates and volumes for future related development project sites. One hundred percent of rainwater from a three-quarter inch rainstorm will be completely captured, infiltrated, and/or used on-site. LAWA will employ the use of underground cisterns, swales, storm drains, or other stormwater management facilities to achieve this result.

4.7.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of Mitigation Measures MM-HWA (LAMP)-1 through 3, the proposed Project's significant impacts on stormwater drainage systems and flooding would be reduced to a level that is less than significant and the proposed Project's contribution to significant cumulative impacts on stormwater drainage systems and flooding would not be cumulatively considerable. The mitigation measures would assure that the proposed Project would not contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, and would not cause an increase in runoff that would cause or exacerbate flooding with the potential to harm people or damage property.

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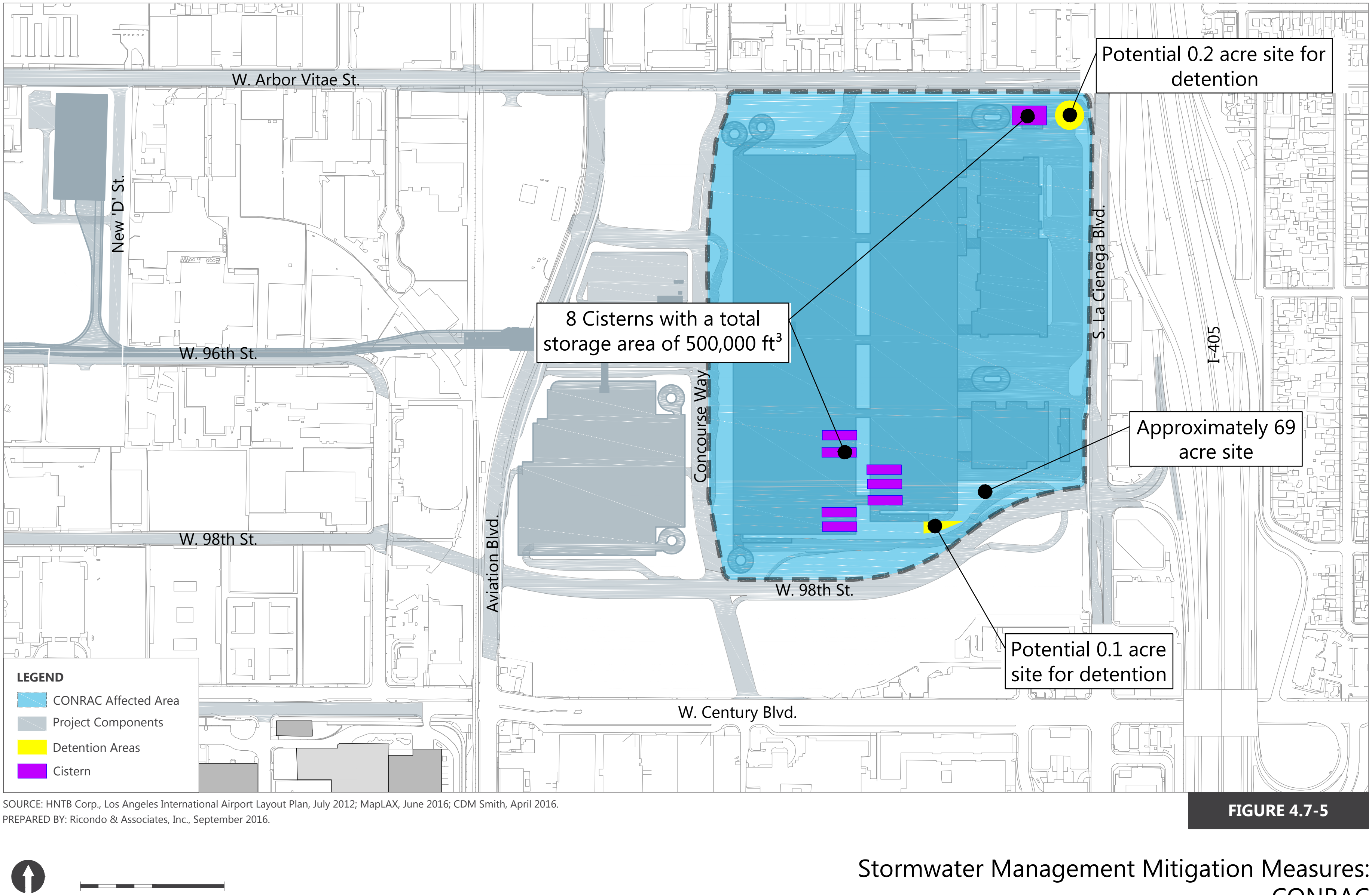

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-5

Stormwater Management Mitigation Measures: CONRAC

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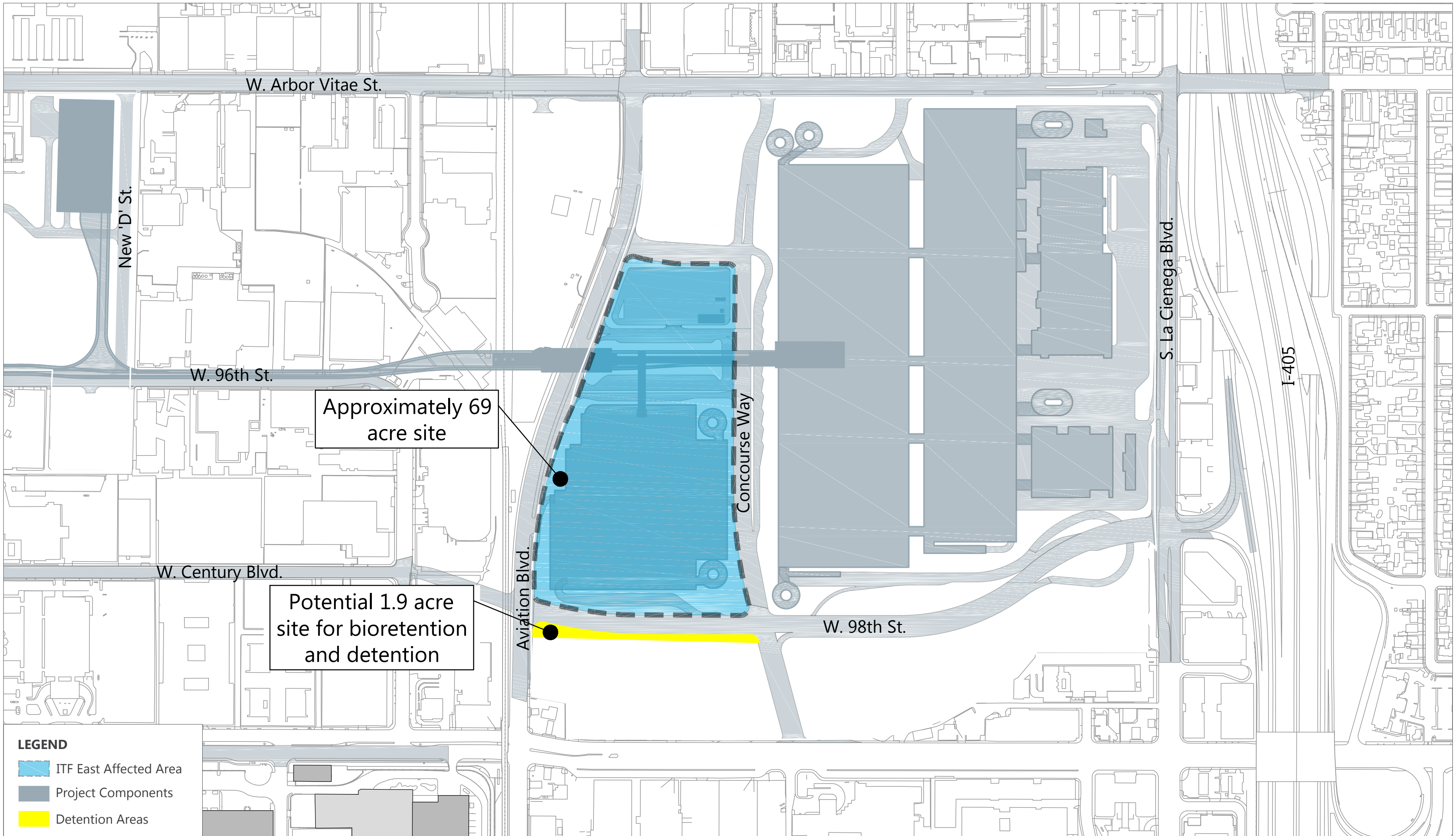

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-6

Stormwater Management Mitigation Measures: ITF East

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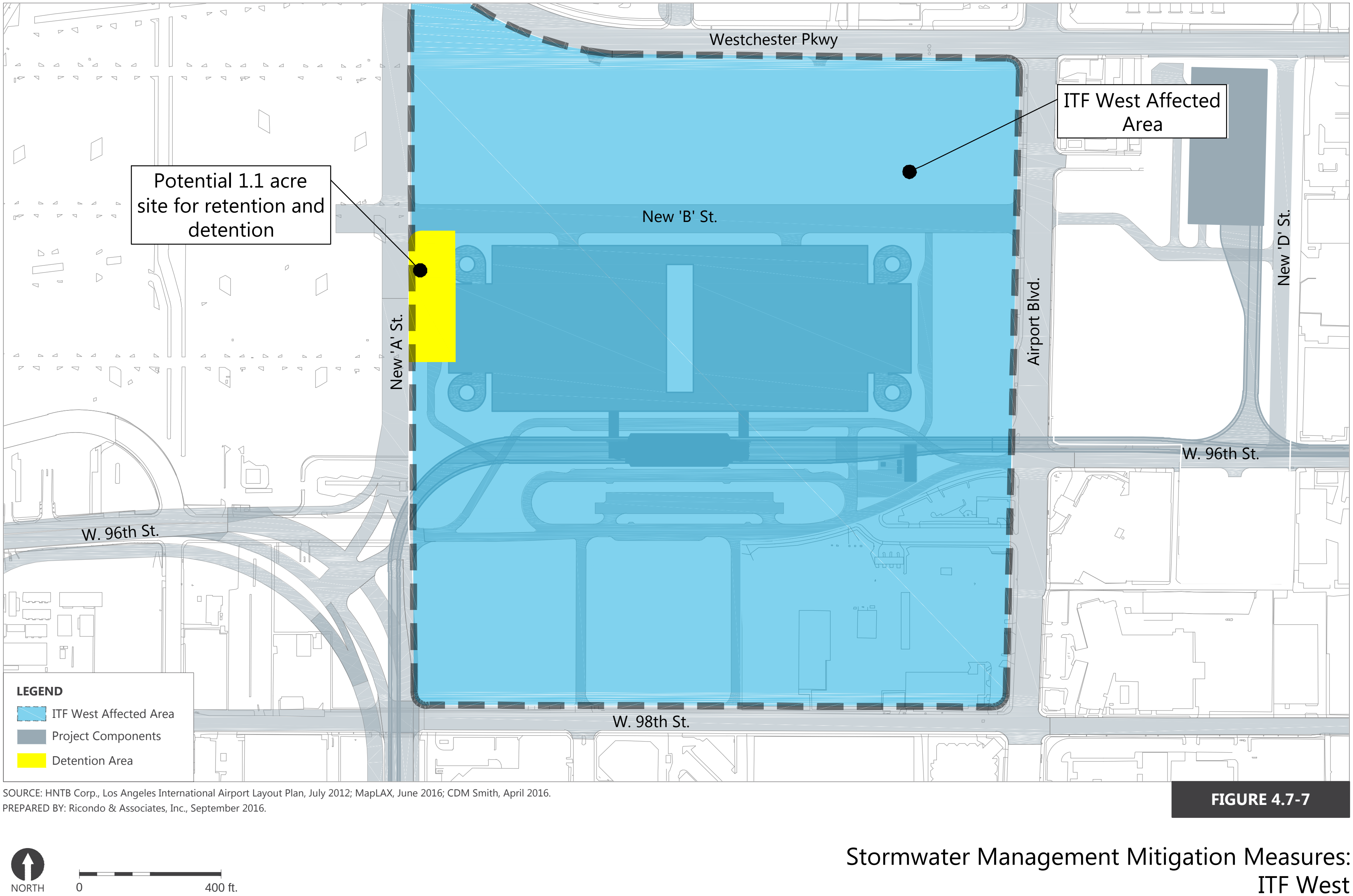

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-7

Stormwater Management Mitigation Measures: ITF West

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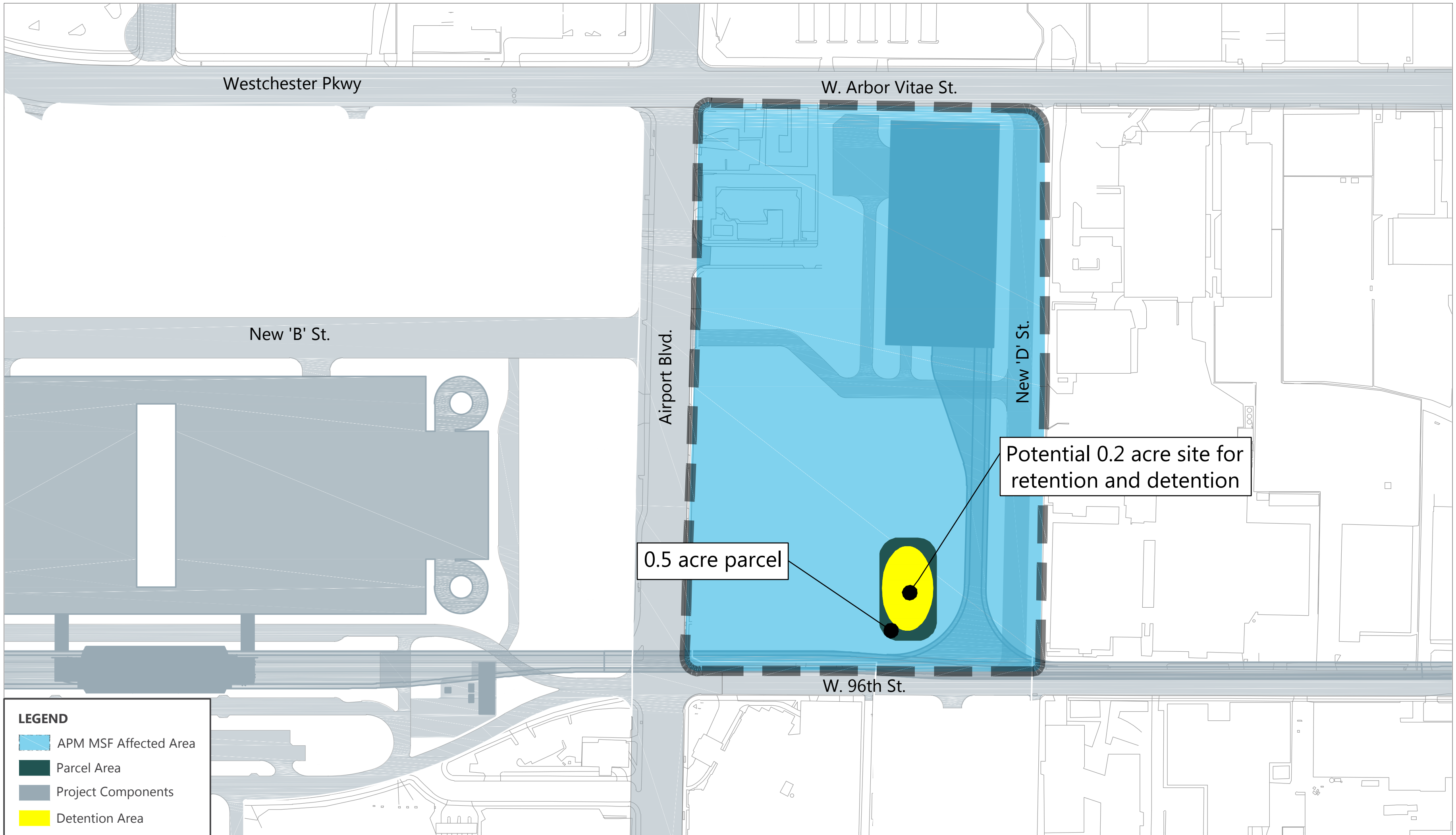

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-8

Stormwater Management Mitigation Measures: APM MSF

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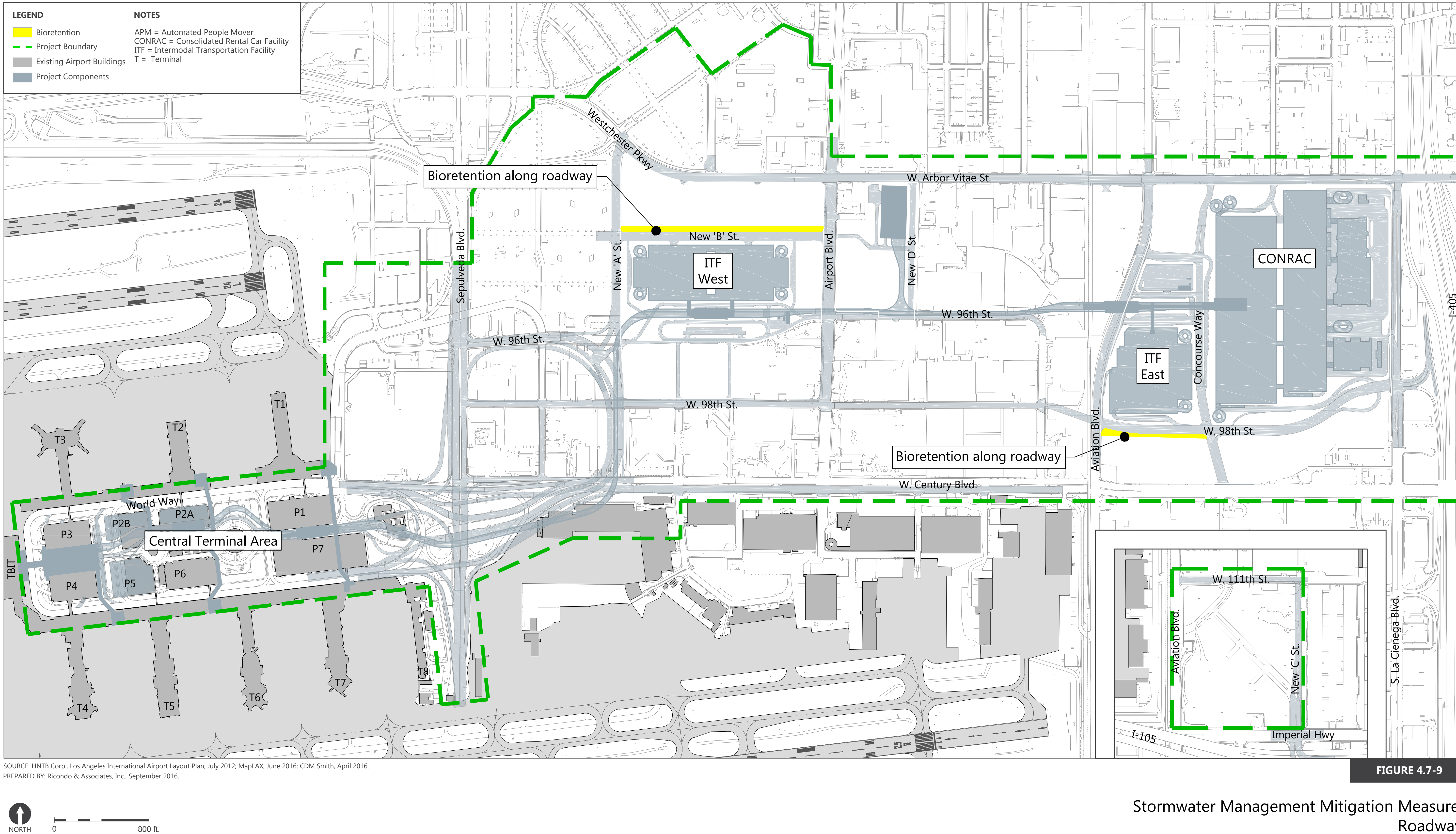

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-9

Stormwater Management Mitigation Measures: Roadways

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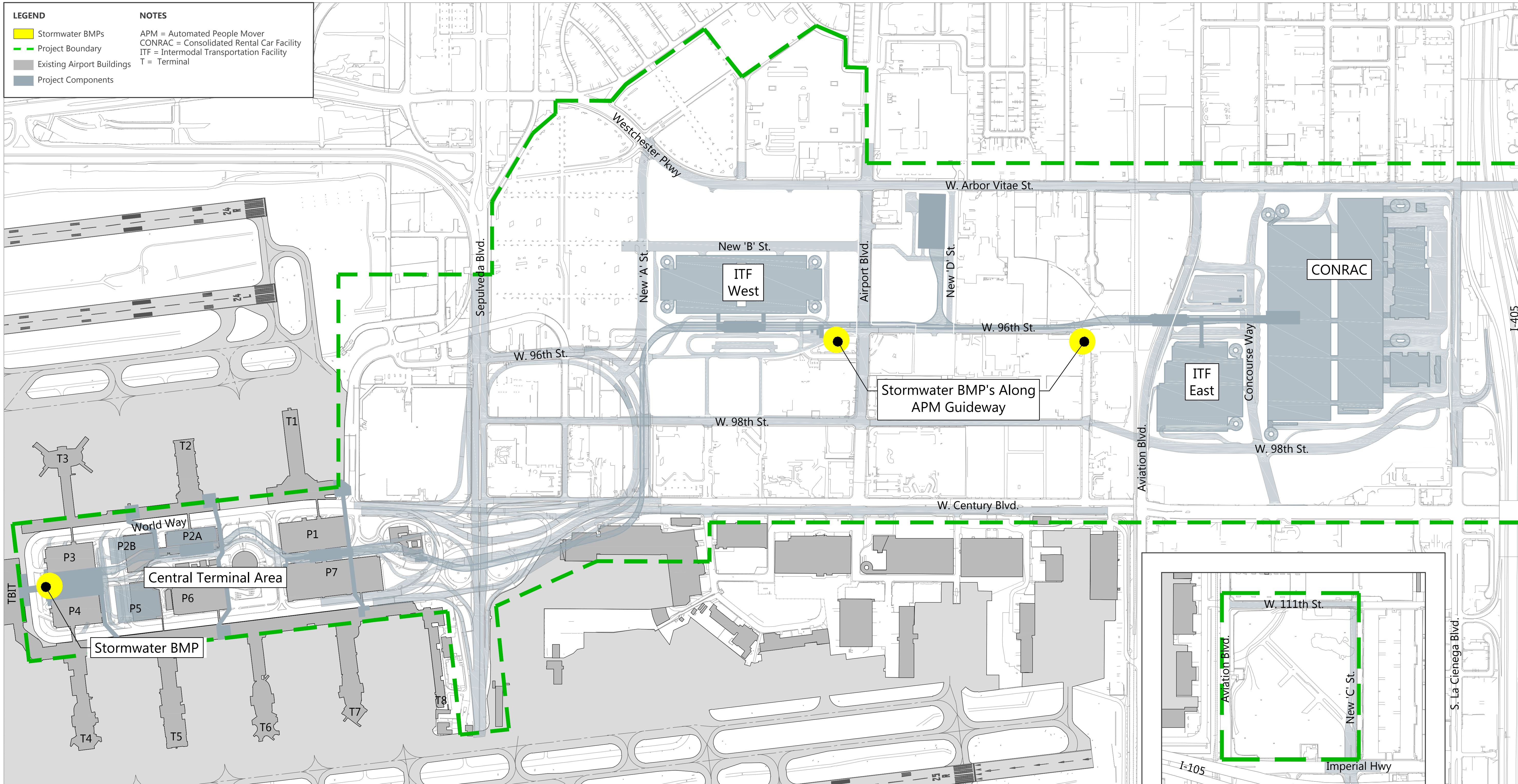

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; CDM Smith, April 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.7-10

Stormwater Management Mitigation Measures: APM Guideway

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4.8 Land Use and Planning

4.8.1 INTRODUCTION

This section provides a description of the land uses in and around the Project site and presents applicable land use plans and policies. Specifically, this section analyzes the proposed Project's consistency with relevant land use plans, policies, and regulations, and whether any conflicts with these land use plans, policies, and regulations would occur, thereby causing physical environmental impacts.

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 land use and planning. For two of these screening thresholds, the Initial Study found that the proposed Project would result in "no impact", and thus, no further analysis of these two topics in an EIR was required. The following Initial Study screening criteria related to land use and planning do not require any additional analysis in this EIR:

- Impacts related to physically dividing an established community were evaluated and determined to have "No Impact" in the Initial Study. As discussed therein, the proposed Project would introduce new Airport-related ground transportation facilities in areas where the existing uses include hotels, office buildings, parking lots/garages, rental car facilities, light industrial uses, Metro facilities, vacant land owned by LAWA, and existing streets. Many of these uses are related to LAX. The proposed Project would complement the existing land use pattern in the area and would not physically divide an existing community.
- Impacts related to conflicts with any applicable habitat conservation plan or natural community conservation plan were evaluated and determined to have "No Impact" in the Initial Study. As discussed therein, the proposed Project is located in urbanized and highly disturbed area. 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.

4.8.2 METHODOLOGY

The assessment of potential land use and planning effects of the proposed Project focuses on the identification of applicable land use plans and policies and assesses if the proposed Project is generally consistent with those plans and policies. Per Appendix G of the State CEQA Guidelines, the emphasis of the plan consistency evaluation focuses on potential inconsistencies between the proposed development and existing land use plans, policies, and regulations adopted to avoid or mitigate environmental effects.

The analysis of plan consistency is designed to determine whether any inconsistencies need to be cured before the proposed project can be approved. The final determination of whether a project is consistent with applicable plans will be made by the lead agency during project approval. A project is considered to be consistent with a general plan and related planning documents if, considering all its aspects, it will further the objectives and policies of the plan or not obstruct their attainment.[1] If a project is determined to be inconsistent with specific individual objectives or policies, but is largely consistent with the land use or the other goals and policies of that plan and would not preclude the attainment of the primary intent of the land use plan, the project would not be considered inconsistent with the plan. Nevertheless, in certain instances, amendments to the various plans are proposed to ensure consistency.

Inconsistencies with a plan are not themselves environmental impacts. In order to be considered an environmental impact, any such inconsistency would also have to result in a physical change in the environment. Thus, plan inconsistencies analyzed below are not considered environmental impacts unless they would result in a physical change in the environment that is not already analyzed in another resource section of this EIR.

The land use planning study area includes the Project site and surrounding areas. The majority of this study area contains LAX property, intermixed with non-Airport property in the communities of Westchester and Playa del Rey in the City of Los Angeles; the Cities of El Segundo, Hawthorne, and Inglewood; and the unincorporated Los Angeles County communities of Del Aire and Lennox. For purposes of the land use analysis, the Project site is split into two general regions, as shown on **Figure 4.8-1** and **Figure 4.8-2**. The North Study Area shown on Figure 4.8-1 consists of 1) the Central Terminal Area (CTA) and 2) East of the Central Terminal Area as described in Chapter 2, *Description of the Proposed Project*. As depicted in Figure 4.8-1, the North Study Area is generally bounded by W. Century Boulevard on the south, Interstate 405 (I-405) on the east, W. Arbor Vitae Street/Los Angeles International Airport (LAX) property boundary on the north, and the CTA on the west. In addition to areas owned and controlled by LAWA, the North Study Area includes proposed acquisition areas that are subject to improvements under the proposed Project. The South Study Area shown on Figure 4.8-2, referred to in Chapter 2 as the Aviation Boulevard/Imperial Highway Area, is bound by Imperial Highway on the south, W. 111th Street on the north, and Aviation Boulevard to the west. The eastern boundary of the South Study Area is the LAX property line. The South Study Area is owned by LAWA.

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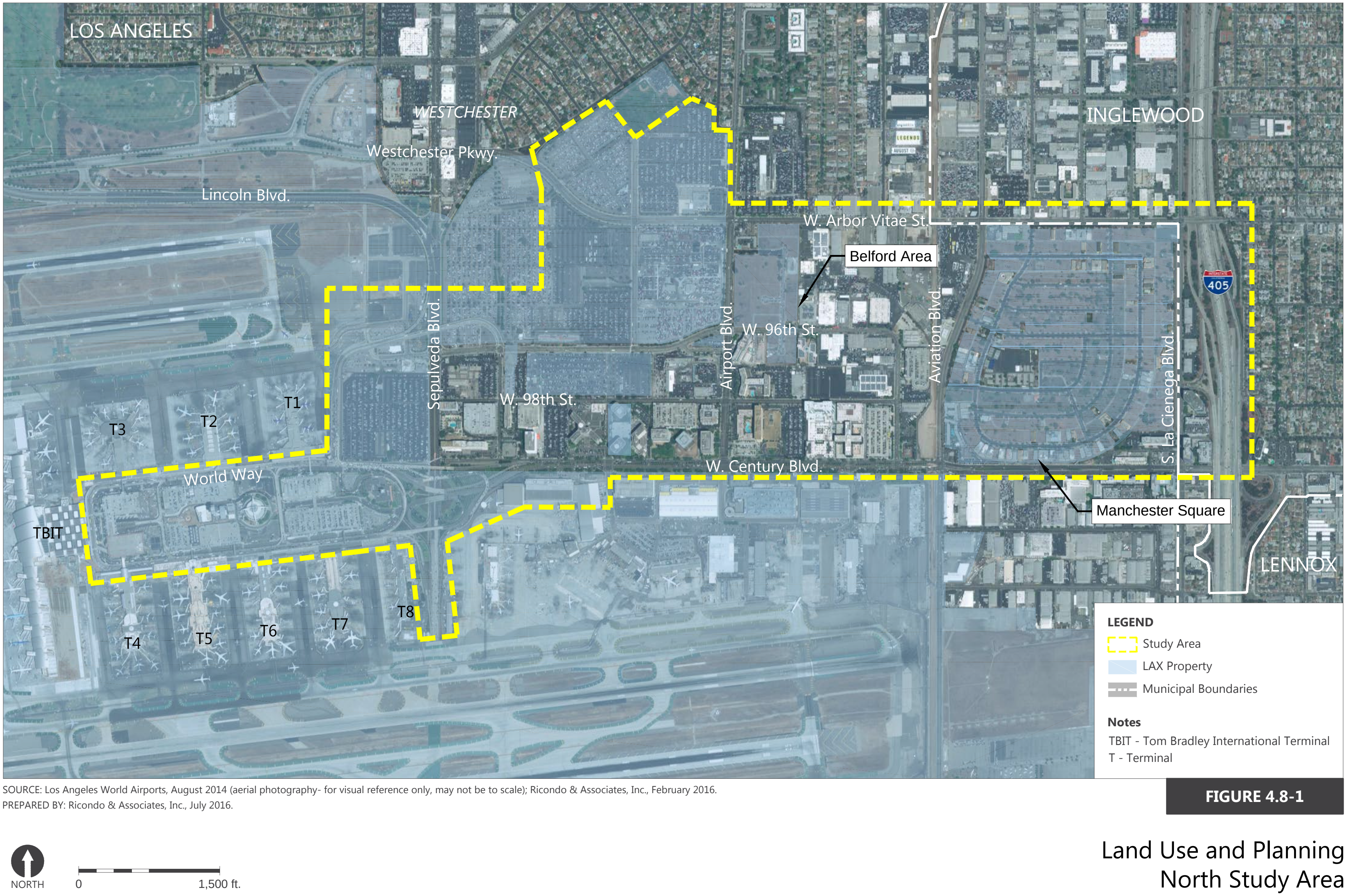
1 A given project need not be in perfect conformity with each and every policy nor does state law require precise conformity of a proposed project with every policy or land use designation for a site. (*Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; see also *San Franciscans Upholding the Downtown Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 719.)



SOURCE: Los Angeles World Airports, August 2014 (aerial photography- for visual reference only, may not be to scale); Ricondo & Associates, Inc., February 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

FIGURE 4.8-1

Land Use and Planning
North Study Area

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SOURCE: Los Angeles World Airports, August 2014 (aerial photography- for visual reference only, may not be to scale); Ricondo & Associates, Inc., January 2016.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

FIGURE 4.8-2

NORTH 0 1,000 ft.

Land Use and Planning South Study Area

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4.8.3 EXISTING CONDITIONS

4.8.3.1 Regulatory Framework

4.8.3.1.1 Southern California Association of Governments

The Project site is located within the Southern California Association of Governments (SCAG) Planning Area. SCAG is a federally designated Metropolitan Planning Organization (MPO) representing six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles). SCAG is mandated by federal and state law to develop plans for transportation and sustainable communities. It develops a regional growth forecast that is the foundation for these plans and also for regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG is responsible for reviewing regionally significant plans, projects, and programs for consistency with SCAG's adopted regional plans. SCAG plans applicable to the proposed Project are described below.

SCAG 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy

In 2012, SCAG adopted the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future.[2] The 2012–2035 RTP/SCS was drafted to comply with federal and state transportation laws; it provides the basic framework for coordinated, long-term investment in the regional transportation system over a 20-year planning horizon. The mission of the 2012–2035 RTP/SCS is to provide "leadership, vision and progress which promote economic growth, personal well-being, and livable communities for all Southern Californians."[3] The 2012–2035 RTP/SCS views mobility as an important component of a much larger picture, with added emphasis on sustainability and integrated planning. The 2012–2035 RTP/SCS is also required to address reducing greenhouse gas emissions from vehicles to comply with Senate Bill 375 and meet the National Ambient Air Quality Standards set forth by the Clean Air Act.

The overall goals of the 2012–2035 RTP/SCS are to (1) maximize mobility and accessibility for all people and goods in the region; (2) ensure travel safety and reliability for all people and goods in the region; (3) preserve and ensure a sustainable regional transportation system; (4) maximize the productivity of the transportation system; (5) encourage land use and growth patterns that facilitate transit and nonmotorized transportation; and (6) protect the environment and health of residents by improving air quality and encouraging active transportation (nonmotorized transportation, such as bicycling and walking). The 2012–2035 RTP/SCS, in its Aviation and Airport Ground Access Appendix (AAGA Appendix), states that the challenge of meeting future aviation demand in the region will be linked to ground access. SCAG's adopted Aviation Decentralization Strategy calls for making substantial airport ground access improvements throughout the region, with the

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2 Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future,* adopted April 4, 2012, Available: http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf, accessed October 2015.

3 Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future,* adopted April 4, 2012, Available: http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf, accessed October 2015.

short-term program emphasizing the relief of immediate bottlenecks around airports through arterial, intersection, and interchange improvements, and increasing transit access to airports.

Amendment No. 2 to the 2012–2035 RTP/SCS was adopted in September 2014 to add projects that are time-sensitive and require amendment to the 2012–2035 RTP/SCS to allow those projects to move forward in a timely manner.[4] The purpose of this amendment is to provide documentation demonstrating that the 2012–2035 RTP/SCS as amended will continue to comply with federal and state requirements, including the Moving Ahead for Progress for the 21st Century Act (MAP-21)[5] metropolitan planning requirements, the Transportation Conformity Rule, and SB 375. Amendment No. 2 to the 2012–2035 RTP/SCS includes an Automated People Mover (APM), Intermodal Transportation Facilities (ITFs), and a Consolidated Rental Car Facility (CONRAC) at LAX.

SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

The 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is a federal and state mandated transportation plan that envisions the future multi-modal transportation system for the region; it provides the basic framework for coordinated, long-term investment in the regional transportation system over a 20-year planning horizon, and is required to be updated every four years.

In April 2016, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS),[6] which replaced the previous 2012–2035 RTP/SCS.[7] The 2016-2040 RTP/SCS reflects changes in economic, policy, and demographic conditions since 2012 and evaluates the goals, guiding policies, and performance measures of the 2012–2035 RTP/SCS to determine if refinements are needed. The 2016-2040 RTP/SCS retained the goals identified in the 2012–2035 RTP/SCS, which are as follows:[8]

(1) align plan investments and policies with improving regional economic development and competitiveness;

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4 Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future, Amendment No. 2,* adopted September 11, 2014, Available: http://rtpscs.scag.ca.gov/Pages/Amendment-2.aspx, accessed February 2016.

5 Public Law 112-141, *Moving Ahead for Progress in the 21st Century Act*, July 6, 2012, Available: https://www.gpo.gov/fdsys/pkg/PLAW-112publ141/pdf/PLAW-112publ141.pdf.

6 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.

7 Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future,* adopted April 4, 2012, Available: http://rtpscs.scag.ca.gov/Documents/2012/final/f2012RTPSCS.pdf.

8 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, p. 64, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

(2) maximize mobility and accessibility for all people and goods in the region;

(3) ensure travel safety and reliability for all people and goods in the region;

(4) preserve and ensure a sustainable regional transportation system;

(5) maximize the productivity of the transportation system;

(6) protect the environment and health of residents by improving air quality and encouraging active transportation (nonmotorized transportation, such as bicycling and walking);

(7) actively encourage and create incentives for energy efficiency, where possible;

(8) encourage land use and growth patterns that facilitate transit and nonmotorized transportation; and

(9) maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.

The 2016-2040 RTP/SCS expanded the Guiding Policies presented in the 2012-2035 RTP/SCS to address emerging technologies relative to reducing congestion and recognizing the potential for transportation investment to improve the efficiency of the transportation network and the environment. The Guiding Policies are as follows:[9]

(1) Transportation investments shall be based on SCAG's adopted regional Performance Indicators;

(2) Ensuring safety, adequate maintenance and efficiency of operations on the existing multi-modal transportation system should be the highest RTP/SCS priorities for any incremental funding in the region;

(3) RTP/SCS land use and growth strategies in the RTP/SCS will respect local input and advance smart growth initiatives;

(4) Transportation demand management (TDM) and active transportation will be focus areas, subject to Policy 1;

(5) HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged, subject to Policy 1;

(6) The RTP/SCS will support investments and strategies to reduce non-recurrent congestion and demand for single occupancy vehicle use, by leveraging advanced technologies;

(7) The RTP/SCS will encourage transportation investments that result in cleaner air, a better environment, a more efficient transportation system and sustainable outcomes in the long run; and

(8) Monitoring progress on all aspects of the Plan, including the timely implementation of projects, programs, and strategies, will be an important and integral component of the Plan.

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9 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, p. 65, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

To reduce the impact of passenger trips on ground transportation congestion, one of the strategies in the 2016-2040 RTP/SCS includes supporting ongoing local planning efforts and the development of transit access to airports. The strategy includes the following:[10]

- Support the regionalization of air travel demand
- Continue to support regional and inter-regional projects that facilitate airport ground access (e.g., High-Speed Train, High Desert Corridor)
- Support ongoing local planning efforts by airport operators, County Transportation Commissions (CTCs) and local jurisdictions
- Encourage the development and use of transit access to the region's airports
- Encourage the use of modes with high average vehicle occupancy (AVO)
- Discourage the use of modes that require "deadhead" trips to/from airports (a deadhead trip is a vehicle trip with no traveling passenger in the vehicle, such as when a parent drives an otherwise empty car to an airport to pick up a college student arriving by air for Thanksgiving vacation.)

The RTP/SCS, in its AAGA Appendix, further states that the ground access network is critical to both the aviation system and the ground transportation system, and that facilitating airport access is essential to the efficient functioning of the aviation system. In addition, airport-related ground trips can contribute to local congestion in the vicinity of the airports.[11]

The RTP/SCS includes a Project List of individual transportation projects aimed at improving the region's mobility and air quality. The 2016-2040 RTP/SCS describes recent efforts and recommended strategies to improve ground access at aviation facilities, including at LAX. The RTP/SCS identifies LAWA's decision in December 2014[12] to overhaul and modernize the ground access and transportation connections to LAX. The listed components are the APM, ITFs, CONRAC, CTA improvements, and connection with the under construction Metro Crenshaw line. These proposed Project components support the 2016-2040 RTP/SCS

[10] 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, p. 111, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

[11] 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, Aviation and Ground Access Appendix*, Adopted April 7, 2016, Available: http://scagrtpscs.net/Documents/2016/final/f2016RTPSCS_Aviation.pdf.

[12] Los Angeles World Airports, Press Release: Board of Airport Commissioners Move Forward with $4 Billion Plan to Transform Arrival and Departure Experience with New LAX Train System, December 18, 2014, Available: http://www.lawa.org/newsContent.aspx?ID=1954.

major initiative to improve airport access. Other key RTP/SCS projects are listed as a new Metro Crenshaw/Green Line station at 96th/Aviation and the APM. Additional strategies are the following: [13]

- Support construction of APM with connection to Metro Crenshaw Line
- Support construction of Consolidated Rental Car facility and ITFs to reduce private vehicles and shuttles in CTA
- Support expansion of FlyAway service to new markets
- Support ability of ride-hailing services to pick up passengers, to reduce deadhead trips in the CTA

SCAG Federal Transportation Improvement Program

The Federal Transportation Improvement Program (FTIP) is a capital listing of all transportation projects, as well as regionally significant transportation projects that require approval from federal funding agencies, proposed over a six-year period for the SCAG region, including highway improvements, transit, rail and bus facilities, high occupancy vehicle lanes, signal synchronization, intersection improvements, and freeway ramps. In the SCAG region, as required under 23 United States Code (USC) Section 134(j)(1)(D), "Updating and Approval," the FTIP update is produced every 2 years, with the last FTIP adopted by SCAG on September 11, 2014, and approved by federal agencies on December 15, 2014.[14] A draft 2017 FTIP was released for public review in July 2016.[15]

The FTIP implements the projects and programs listed in the RTP and developed in compliance with state and federal requirements. County transportation commissions have the responsibility under state law for proposing county projects, using the current RTP's policies, programs, and projects as a guide, from among submittals by cities and local agencies. The locally prioritized lists of projects are forwarded to SCAG for review, and development of the FTIP is based on consistency with the current RTP, intercounty connectivity, financial constraint, and conformity satisfaction.

The latest FTIP includes projects by the City of Inglewood and by LAWA, among other projects, to improve traffic flow through installation of Intelligent Transportation Systems, roadway restriping, and signal phasing. The 2014 FTIP also includes Metro's Crenshaw/LAX light rail line. The draft 2017 FTIP also includes Metro's Crenshaw/LAX light rail line.

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13 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, p. 112, Available: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

14 Southern California Association of Governments, *2015 Final Federal Transportation Improvement Plan*, September 2014, Available: http://ftip.scag.ca.gov/Pages/2015/adopted.aspx.

15 Southern California Association of Governments, *Draft 2017 Federal Transportation Improvement Plan,* July 2016, Available: http://ftip.scag.ca.gov/Pages/2017/draft.aspx.

4.8.3.1.2 Los Angeles County Airport Land Use Commission

Airport Land Use Plan

The State Aeronautics Act mandates that each county containing a public airport have an Airport Land Use Commission (ALUC).[16] The Los Angeles County Regional Planning Commission is the designated ALUC for airports within Los Angeles County; ALUC's are required to coordinate planning for the areas surrounding public use airports. The purpose of the ALUC is "to protect the public health, safety, and welfare by ensuring orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."[17] This is achieved through review of proposed development surrounding airports and through policy and guidance provided in the Airport Land Use Plan (ALUP). In formulating the ALUP, the ALUC establishes provisions to ensure safe airport operations, through the delineation of Runway Protection Zones (RPZs) and height restriction boundaries, and to reduce excessive noise exposure to sensitive uses through noise insulation or land reuse.[18] The ALUP establishes a planning boundary for each commercial airport within Los Angeles County to delineate areas subject to noise impacts and safety hazards, specifically, areas within the Airport's 65 community noise exposure level (CNEL) noise contour and areas within the RPZ(s), respectively. Those noise and safety areas, together, determine the Airport Influence Area (AIA) specific to each airport. The ALUP is implemented through General Plan, Specific Plan, and zoning amendments.[19] Amendments to a specific plan or General Plan within an airport's AIA require review by the ALUC and a Consistency Determination with the ALUP.

The ALUP for Los Angeles County includes policies addressing noise, safety, airspace hazards, and land use/noise compatibility criteria for new proposed land uses. The ALUP includes a Land Use Compatibility Table; ALUP policies require new uses to adhere to the criteria set forth in that table and encourage the removal of incompatible land uses. The ALUP also includes policies prohibiting uses that would negatively affect safe air navigation, including limitations on height and light from uses within the RPZ.

As shown in **Figure 4.8-3,** both the North Study Area and South Study Area are located within the AIA identified for LAX in the ALUP, primarily with respect to being within the Airport's 65 CNEL noise contour. Although the northwestern portion of the North Study Area extends into the RPZ for the north airfield complex, the limits of the proposed Project improvements are outside the RPZ.

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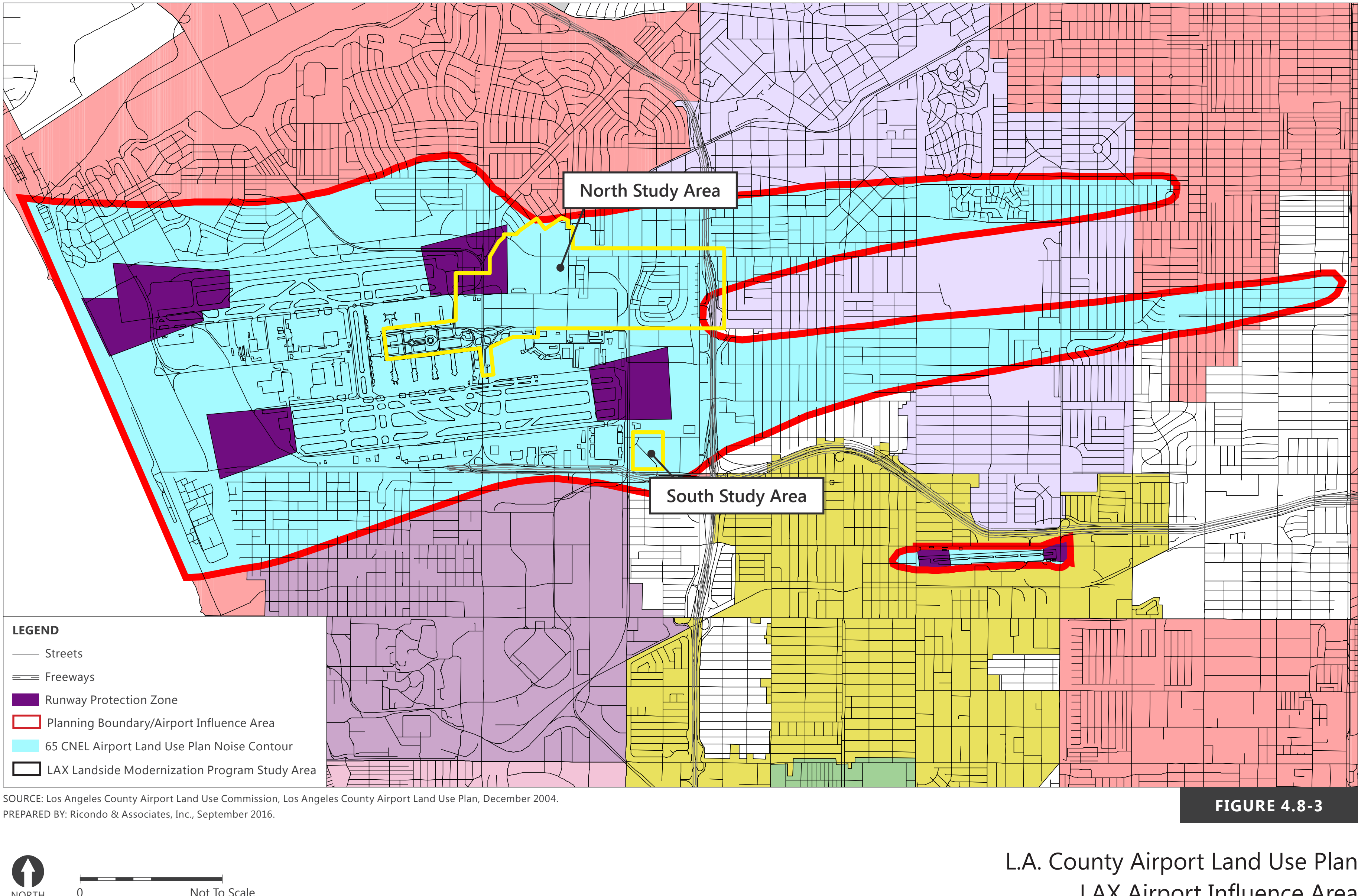
16 California Public Utilities Code, Sections 21674.5 and 21674.7.

17 Los Angeles County, Airport Land Use Commission, Department of Regional Planning, *Los Angeles County Airport Land Use Plan*, adopted December 19, 1991, revised December 1, 2004, Available: http://planning.lacounty.gov/view/alup/.

18 Los Angeles County, Airport Land Use Commission, Department of Regional Planning, *Los Angeles County Airport Land Use Plan*, adopted December 19, 1991, revised December 1, 2004, Available: http://planning.lacounty.gov/view/alup/.

19 California Public Utilities Code Section 21676.



SOURCE: Los Angeles County Airport Land Use Commission, Los Angeles County Airport Land Use Plan, December 2004.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.8-3

L.A. County Airport Land Use Plan
LAX Airport Influence Area

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4.8.3.1.3 City of Los Angeles

California state law requires every city and county to adopt a comprehensive General Plan to guide its future development. The City of Los Angeles General Plan includes a Framework Element, a Land Use Element comprised of 35 Community Plans, the LAX Plan, and the Port of Los Angeles Plan, and the following topical elements: Air Quality, Conservation, Housing, Noise, Open Space, Service Systems/Public Recreation, Safety, Mobility Plan 2035, and Plan for a Healthy Los Angeles.

General Plan Framework Element

The City of Los Angeles General Plan Framework Element establishes the conceptual basis for the City's General Plan. The General Plan Framework sets forth a Citywide, comprehensive, long-range growth strategy and defines Citywide policies through the following chapters: Land Use, Housing, Urban Form and Neighborhood Design, Open Space and Conservation, Economic Development, Transportation, and Infrastructure and Public Services. General Plan land use policies are further guided at the community level through community plans and specific plans. The policies most relevant to the proposed Project are located in the Land Use and Economic Development chapters and are presented below. The General Plan policies related to transportation are set forth in the Mobility Plan 2035, and are discussed later in this section.

A primary objective of the policies in the Framework Element's Land Use chapter[20] is to support the viability of the City's residential neighborhoods and commercial districts. When growth occurs, the Framework encourages sustainable growth in a number of higher intensity commercial and mixed-use districts, centers, and boulevards and industrial districts particularly in proximity to transportation corridors and transit stations. The locations of these areas are generally represented within the Framework Element. The Land Use chapter of the General Plan Framework Element designates land use categories (i.e., Neighborhood Districts, Community Centers, Regional Centers, Downtown Centers, and Mixed-Use Boulevards) and provides policies applicable to each land use category to support the vitality of the City's residential neighborhoods and commercial districts. The General Plan Framework Element's Long-Range Land Use Diagram identifies the area along Century Boulevard as a Regional Center; the remainder of the property within the North Study Area was not given a specific designation. The property within the South Study Area is also identified in the Long-Range Land Use Diagram as a Regional Center.

A Regional Center is defined as a focal point of regional commerce, identity, and activity that contains a diversity of uses. As noted on the Framework Element's Long-Range Land Use Diagram and as defined in the text of the Framework, Regional Centers should generally be developed at a density of 1.5:1 to 6.0:1 floor-area ratio (FAR), and to a height of 6 to 20 stories. The policies for Regional Centers that are relevant to the proposed Project are as follows:

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20 City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework, An Element of the City of Los Angeles General Plan, Chapter 3, Land Use*, Originally adopted December 11, 1996, Re-adopted August 8, 2001, Available: http://cityplanning.lacity.org/Cwd/Framwk/contents.htm.

- Accommodate land uses that serve a regional market in areas designated as "Regional Center." Retail uses and services that support and are integrated with the primary uses shall be permitted. The range and densities/intensities of uses permitted in any area shall be identified in the community plans.
- Accommodate and encourage the development of multi-modal transportation centers, where appropriate.

The Economic Development chapter of the General Plan Framework[21] addresses policies and programs to promote business retention and job growth within the City and includes the following policies specific to LAX:

- Facilitate environmentally sound operations and expansion of the Port of Los Angeles and the Los Angeles International Airport as major drivers of the local and regional economy.

- Recognize the crucial role that the Port of Los Angeles and the Los Angeles International Airport play in future employment growth by supporting planned Port and Airport expansion and modernization that mitigates its negative impacts.

Mobility Plan 2035

The Mobility Plan 2035, adopted in 2015, and subsequently amended in 2016, is the new General Plan Transportation Element for the City of Los Angeles. The Mobility Plan 2035 establishes updated policies and programs as a policy foundation for providing safe and accessible streets for vehicles, pedestrians, bicycles, and transit users throughout the City. It is structured around five main objectives: improved safety; enhanced quality of infrastructure; access for all; collaboration, communication, and choice; and environmental and community health.[22] The Mobility Plan 2035 includes specified pedestrian, bicycle, neighborhood, transit, and vehicle enhancements and design standards throughout the City. Many of the policies relate to roadway design and envision a balanced, multi-modal transportation system with connections throughout the City to improve mobility and create a more pedestrian friendly atmosphere. These policies are presented in detail in the impact analysis in Section 4.8.5.1.

Figure 4.8-4 shows the bicycle plan from the Mobility Plan 2035 for the LAX area. As shown on Figure 4.8-4, the Mobility Plan 2035 bicycle plan in the vicinity of LAX includes proposed bike lanes on Westchester Parkway/W. Arbor Vitae Street, Aviation Boulevard, and W. 96th Street.

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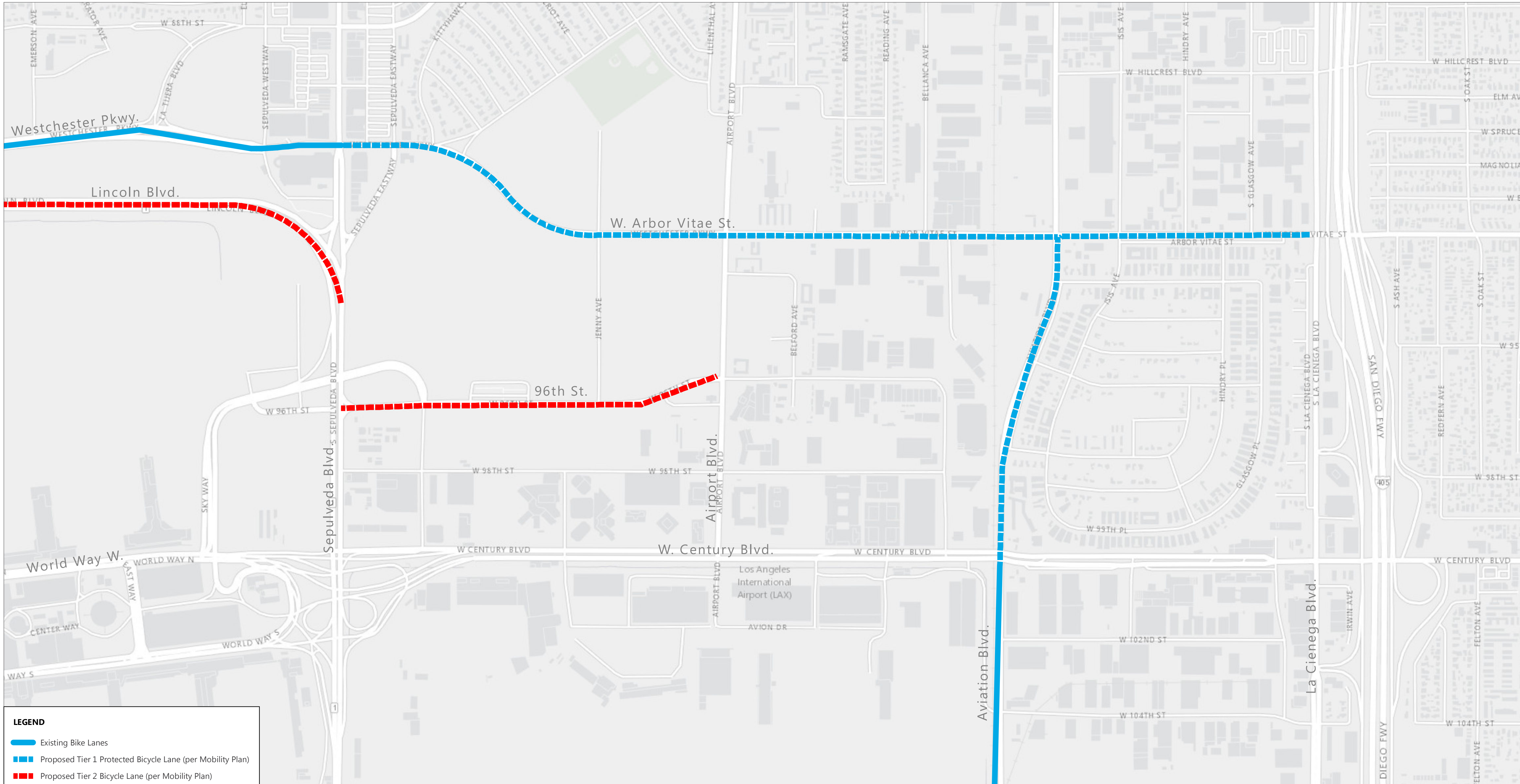
[21] City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework, An Element of the City of Los Angeles General Plan, Chapter 7, Economic Development*, Originally adopted December 11, 1996, Re-adopted August 8, 2001, Available: http://cityplanning.lacity.org/Cwd/Framwk/contents.htm.

[22] City of Los Angeles, Department of City Planning, *Mobility Plan 2035, An Element of the General Plan*, adopted January 20, 2016, Available: http://planning.lacity.org/documents/policy/mobilityplnmemo.PDF.



SOURCES: National Geographic World Map, ESRI Database, 2011; City of Los Angeles, General Plan, Mobility Element 2035, January 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 800 ft.

FIGURE 4.8-4

Mobility Plan 2035
Bicycle Plan in Project Area

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Community Plans

The land use policies and standards of the General Plan Framework and the General Plan Elements are implemented at the local level through 35 community plans and the LAX Plan and Port of Los Angeles Plan, which focus on specific geographies within the City. The Project area is primarily located within the LAX Plan boundaries, although small portions of the North Study Area are located within the Westchester–Playa del Rey Community Plan area (see Figure 2-52 in Chapter 2, *Description of the Proposed Project,* which delineates areas to be added to the LAX Plan boundary – those areas are currently within the Westchester–Playa del Rey Community Plan).

LAX Plan

The LAX Plan[23] is the community plan for the LAX area and was adopted concurrently with the LAX Master Plan, approved by the Los Angeles City Council in December 2004 and amended in 2013. The LAX Plan is part of the Land Use Element of the City of Los Angeles General Plan. The LAX Plan establishes the land use policy for LAX and is intended to promote an arrangement of airport uses that encourages and contributes to the modernization of the Airport in an orderly and flexible manner within the context of the City and region. It provides goals, objectives, policies, and programs that establish a framework for the development of facilities promoting the movement and processing of passengers and cargo within a safe and secure environment. The LAX Plan is intended to allow the Airport to respond to emerging new technologies, economic trends, and functional needs.

As described in the LAX Plan, and shown in **Figure 4.8-5**, the LAX property has four land use designations: Airport Airside, Airport Landside, LAX Northside, and Open Space, as further described below.

- The Airport Airside area includes those aspects of passenger and cargo movement that are associated with aircraft operating under power and related airfield support services. Permitted uses include four runways, taxiways, aircraft gates, maintenance areas, airfield operation areas, air cargo areas, passenger handling facilities, fire protection facilities, and other ancillary airport facilities.
- The Airport Landside area functions as the interface between Airport Airside and the regional ground transportation network, establishing access portals for the efficient processing of people and goods. As stated in the existing LAX Plan, uses in this area may include systems and facilities such as the CTA, Ground Transportation Center (GTC), ITFs, CONRAC, APM, and airport parking. Aircraft are not permitted under power in this area. Examples of uses within these areas include passenger handling services, airport administrative offices, parking areas, cargo facilities, and other ancillary airport facilities.

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23 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

- The LAX Northside area provides for the development of uses that are consistent with airport needs and neighborhood conditions, while also serving as an airport buffer zone (composed of compatible development and landscape) for the Westchester community. The primary allowable uses within LAX Northside include, but are not limited to: commercial development; office; light industrial; research and development; hotel and conference facilities; retail and restaurant uses; school and community facilities; open space; bicycle paths; and greenway buffers.
- The Open Space area comprises the Los Angeles Airport/El Segundo Dunes. Development within this area is limited to existing and relocated navigational aids, restoration and maintenance of the Dunes Habitat Preserve, a park, and other ancillary facilities per the adopted Los Angeles Airport/El Segundo Dunes Specific Plan. The Los Angeles Airport/El Segundo Dunes Specific Plan Area is located at the far western boundary of LAX; this area is well-removed from the Project site by more than 1.6 miles.

In addition to the four land use categories described above, the LAX Plan identifies the Belford Special Study Area, located east of Airport Boulevard and south of W. Arbor Vitae Street, as an area designated for Medium Residential and Regional Center Commercial land uses; however, additional study of the subject area is required before any development can occur therein.

Westchester–Playa del Rey Community Plan

As previously described, portions of the North Study Area lie within the Westchester–Playa del Rey Community Plan area. The Westchester-Playa del Rey Community Plan area contains approximately 5,766 net acres, and includes the area north of Imperial Highway and west of Vista del Mar, and the area north of LAX and generally bounded by Jefferson Boulevard on the north and by the I-405 Freeway and La Cienega Boulevard on the east.[24] **Figure 4.8-6** delineates the boundary and generalized land use plan designations of the Westchester-Playa del Rey Community Plan. As can be seen in comparing Figures 4.8-5 and 4.8-6, the Westchester-Playa del Rey Community Plan area directly borders the LAX Plan area to the north, west, southwest, and east. The land uses designated in the Westchester-Playa del Rey Community Plan area consist primarily of residential uses, with commercial uses concentrated near the transportation corridors of Lincoln Boulevard, Sepulveda Boulevard, and Century Boulevard. Industrial land uses are primarily located in the east and southeast section of the community, close to LAX. Many of the businesses here are closely tied to the aviation industry and include logistics, aircraft repair or part fabrication, food service, and parking lots for car rental agencies and long-term airport parking use. According to the Community Plan, the area's industrial land uses provide employment, services, and other important benefits to the community, LAX, and the region.[25]

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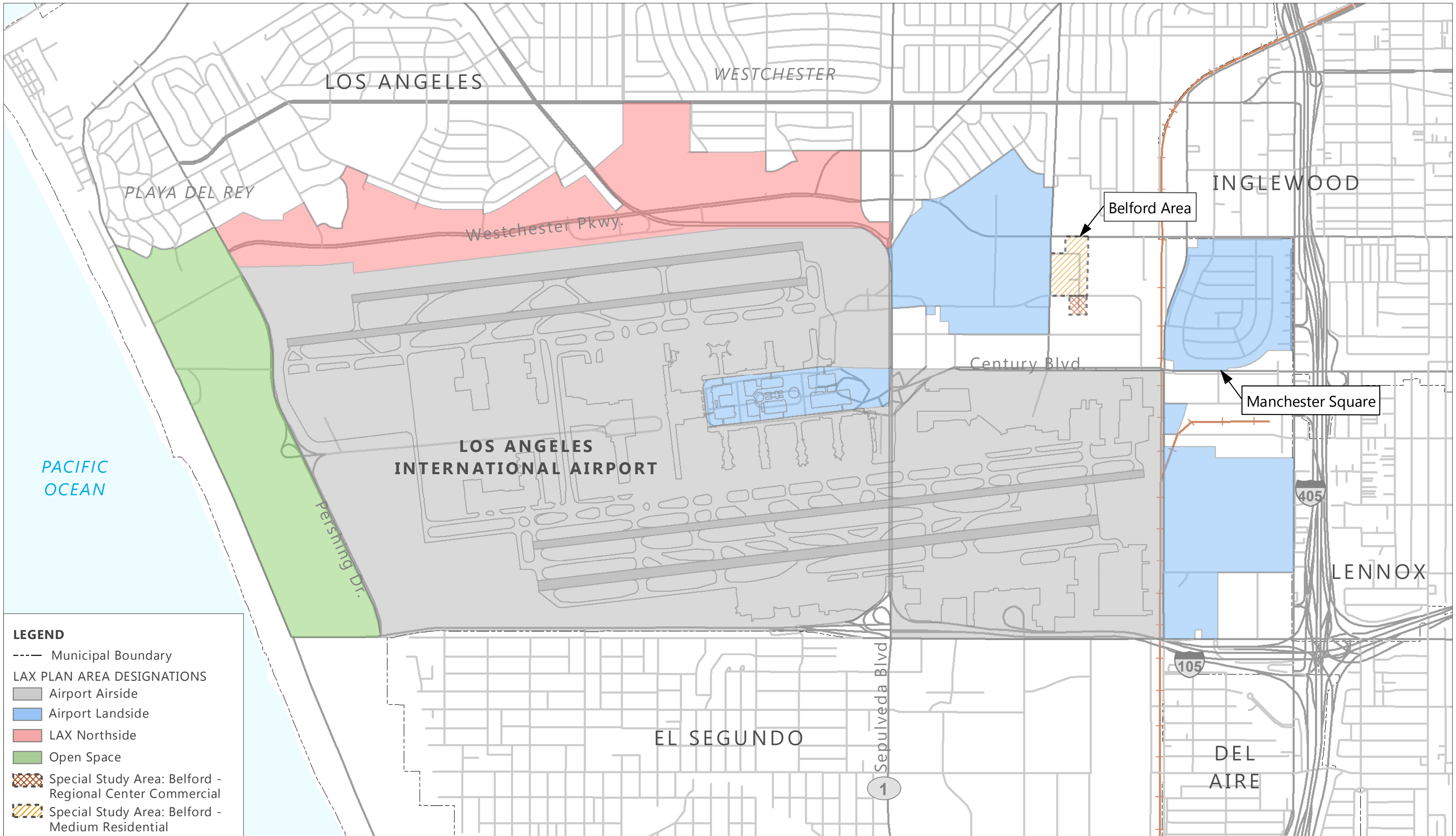
[24] City of Los Angeles, Department of City Planning, *Westchester - Playa del Rey Community Plan*, adopted April 13, 2004, as amended.

[25] City of Los Angeles, Department of City Planning, *Westchester - Playa del Rey Community Plan*, adopted April 13, 2004, as amended, pp. I-1 to 3.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); U.S. Census, 2013 TIGER/Line Shapefiles, accessed online: http://www.census.gov/cgi-bin/geo/shapefiles2013/main, March 2014; City of Los Angeles, LAX Plan, effective July 3, 2013.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.8-5

Current LAX Plan Area

[Draft]

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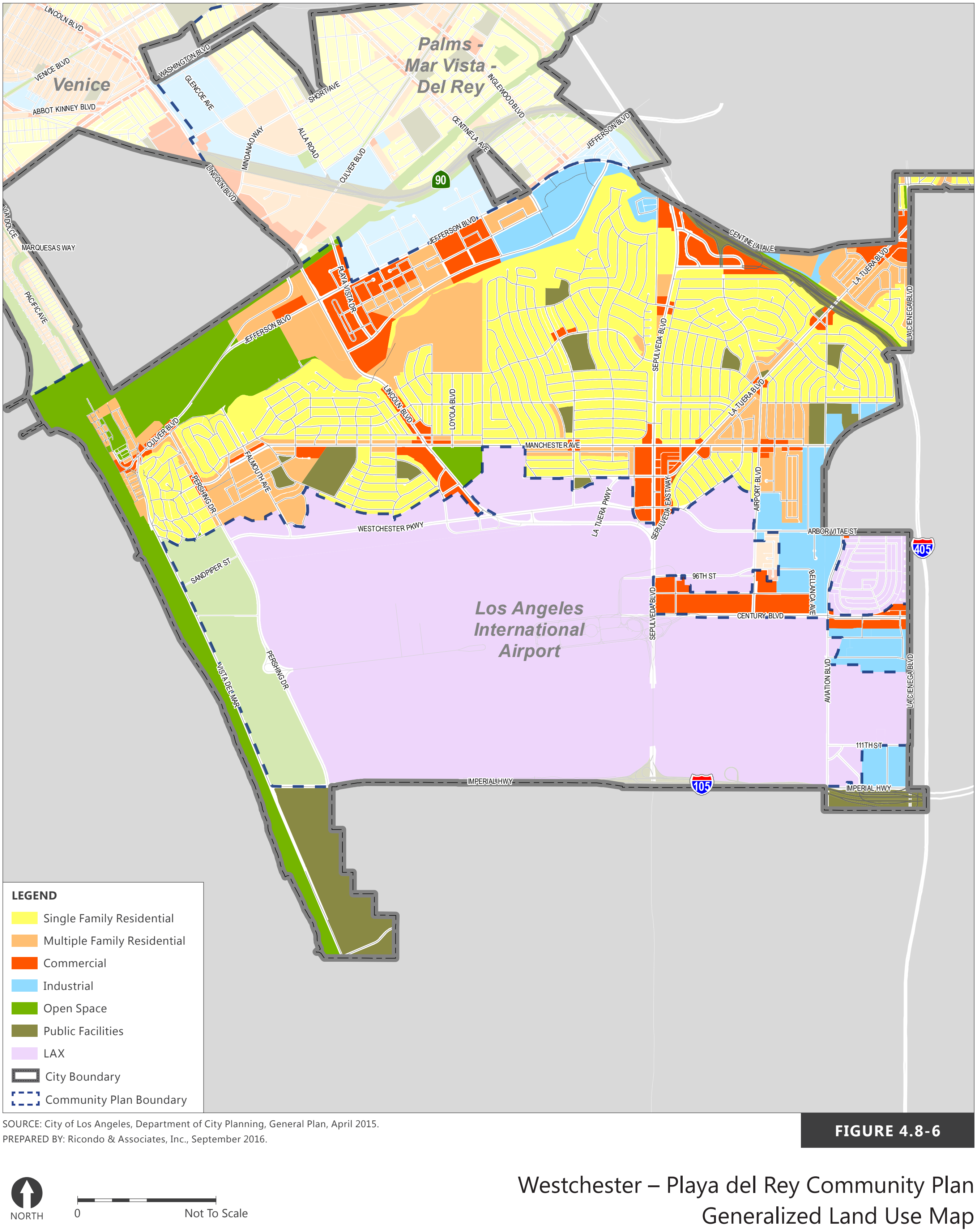

SOURCE: City of Los Angeles, Department of City Planning, General Plan, April 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.8-6

Westchester – Playa del Rey Community Plan
Generalized Land Use Map

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The Westchester-Playa del Rey Community Plan recognizes the intertwined relationship between LAX and the Westchester–Playa del Rey community. One of the stated goals of the plan is to coordinate the development of LAX with the surrounding communities, to provide adequate buffer (comprised of compatible development) and transitional land uses, and to help stimulate the revitalization of various business districts in Westchester. The Plan includes a goal to coordinate the development of LAX and its ancillary facilities and circulation system with surrounding communities to increase its safety, security, and efficient operational capabilities to serve the passenger travel and air-cargo demand throughout Los Angeles and the region, while minimizing the potential adverse environmental impacts resulting from such activities. These policies are presented in detail in the impact analysis in Section 4.8.5.1.

LAX Specific Plan

In 2004, in connection with approval of the LAX Master Plan, the City Council approved the LAX Specific Plan.[26] Amended in 2013 and 2016, the LAX Specific Plan contains land use regulations and procedures for the processing of future individual projects and activities under the LAX Plan. While the LAX Plan identifies goals, objectives, and policies, the LAX Specific Plan details use limitations and design regulations within the plan area. As shown in **Figure 4.8-7**,[27] and described below, the LAX Specific Plan is divided into three subareas: Airport Airside; Airport Landside; and LAX Northside, which are described below.

- Airport Airside: Permitted uses in the Airport Airside Subarea include, but are not limited to airline clubs, retail use, and restaurants; surface and structured parking lots; aircraft under power; airline maintenance and support; air cargo facilities; commercial passenger vehicle staging and holding area; helicopter operations; navigational aids; runways, taxiways, aircraft parking aprons, and service roads; passenger handling facilities; and other ancillary airport facilities.
- Airport Landside: Permitted uses in the Airport Landside Subarea include, but are not limited to: airline clubs, retail use, and restaurants; rental car operations; surface and structured parking lots; airline maintenance and support; air cargo facilities; commercial passenger vehicle staging and holding area; helicopter operations; navigational aids; passenger handling facilities; service roads; and APM systems, its stations, and related facilities.
- LAX Northside: Permitted uses in the LAX Northside Subarea are defined in the LAX Northside Design Guidelines and Standards and would generally include community/civic , office/research and development, recreation/open space, commercial, airport support, and landscaped buffer. The development of the LAX Northside Subarea would allow a total floor area of 2.32 million square feet of commercial, recreational, and airport-related industrial land uses on approximately 340 acres.

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[26] City of Los Angeles, Department of City Planning, *Los Angeles International Airport (LAX) Specific Plan*, adopted December 14, 2004, last amended June 14, 2016, Available: http://clkrep.lacity.org/onlinedocs/2013/13-0285-s3_ORD_184348_6-15-16.pdf.

[27] Figure 4.8-7 delineates the correct boundary of the current LAX Specific Plan. While Maps 1 and 2 in Ordinance No. 184348, which amended the LAX Specific Plan in June 2016, show a slightly different boundary in the eastern portion of the Specific Plan area, those maps were from the 2004 LAX Specific Plan and were inadvertently attached to the ordinance instead of the correct 2013 LAX Specific Plan maps.

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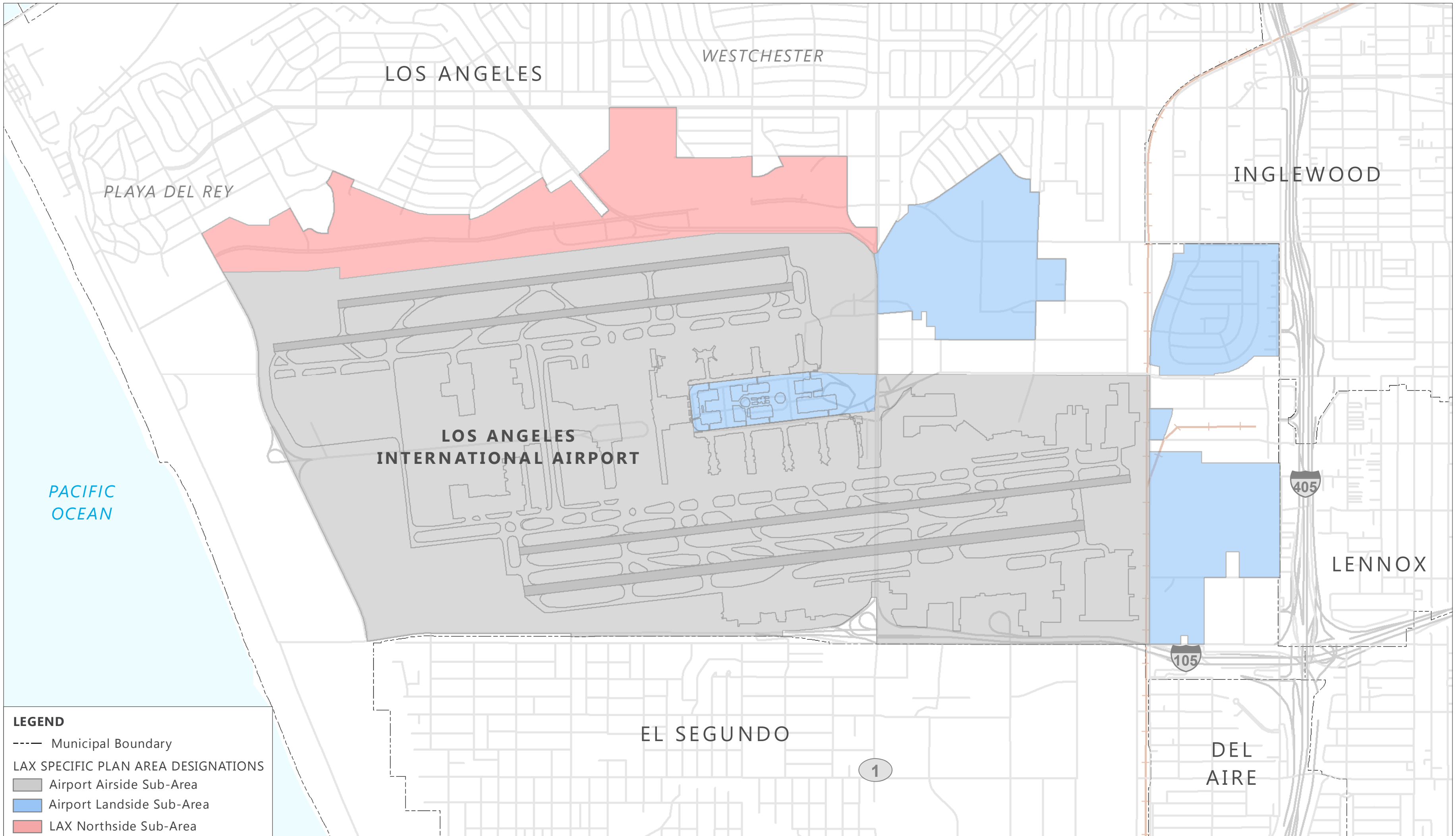

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); U.S. Census, 2013 TIGER/Line Shapefiles, accessed online: http://www.census.gov/cgi-bin/geo/shapefiles2013/main, March 2014; City of Los Angeles, LAX Specific Plan, September 2004, as amended by Ordinance 182542 on September 2013.;
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.8-7

NORTH 0 3,000 ft.

Current LAX Specific Plan Area

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The Project site is located within the Airport Airside and Airport Landside Subareas, and does not extend into the LAX Northside Subarea.

Los Angeles Planning and Zoning Code

Chapter I of the Los Angeles Municipal Code comprises the Planning and Zoning Code. Article 2, Section 12.19.1 establishes the Los Angeles International Airport (LAX) Zone that applies to those areas within the LAX Specific Plan that LAWA owns or possesses by rights. Properties not owned or possessed by LAWA retain the zoning in effect prior to establishment of the LAX zoning designation. The LAX Zone requires all buildings, structures, and land to be constructed and used in accordance with the LAX Specific Plan.

The majority of the Project site, as encompassed within the North Study Area and the South Study Area, is located within the LAX Zone, as shown in **Figure 4.8-8**. Other existing zoning designations include commercial and industrial uses within the North Study Area, along with commercial, residential and industrial uses to the north, east, and southeast of that Area. Relative to the South Study Area, the only non-LAX Zone use is industrial to the east. Given the highly urbanized/developed nature of the areas in and around LAX, the land use types reflected by the zoning designations shown in Figure 4.8-8 are a good representation of the land uses that currently exist in the subject area (i.e., in general, there are relatively few areas that are not already developed with the designated land use types).

4.8.3.2 Existing Land Use Setting

LAX is bordered on the north by the City of Los Angeles communities of Westchester and Playa del Rey; on the south by the City of El Segundo; on the southeast by the unincorporated Los Angeles County community of Del Aire and the City of Hawthorne; and on the east by the City of Inglewood and the unincorporated Los Angeles County community of Lennox. Vista del Mar, Dockweiler State Beach, and the Santa Monica Bay are located to the west of the Airport. All of these cities and communities are located within Los Angeles County. The majority of the land use and planning study area contains LAX property and airport-related uses, intermixed with some non-airport uses as further described below. The following describes the existing land use setting within and surrounding the Project area.

4.8.3.2.1 Project Area

As described in Section 4.8.2, *Methodology*, above, the Project area is encompassed within the North Study Area and the South Study Area. The North Study Area (see Figure 4.8-1) includes Airport areas owned and controlled by LAWA and proposed acquisition areas that are subject to improvements under the proposed Project. The existing uses in this area include airport and airport support, including the CTA and airport parking areas, and residential, commercial, and light industrial uses. Similarly, surrounding uses includes airport and airport support, residential, commercial, and light industrial uses. The South Study Area (Figure 4.8-2), formerly vacant, is currently used as a construction staging area for ongoing development projects at LAX. Surrounding uses include LAX support facilities, a restaurant, and Imperial Highway and the 105 Freeway. The following describes existing land uses where each of the main components of the Project is proposed.

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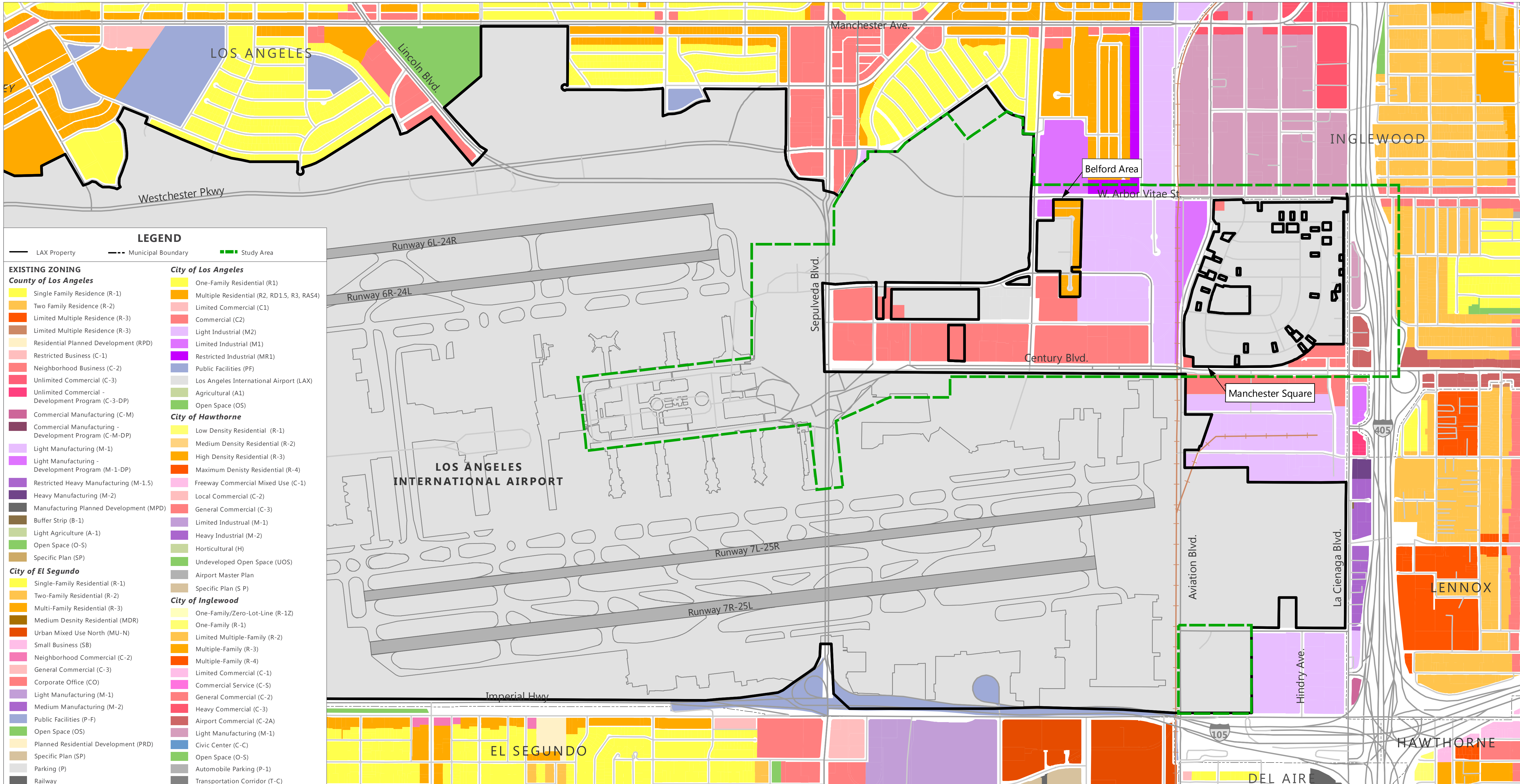

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2015 (runways, taxiways, terminal area, ariport property boundary). South California Association of Governments (land use), 2008.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.8-8

NORTH

0 1,500 ft.

Existing Zoning in the Vicinity of LAX

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Automated People Mover

The APM system would extend in generally an east-west alignment, extending between the proposed CONRAC and the CTA with stops along the way at the ITFs and Metro's Airport Metro Connector (AMC) Station, plus a proposed APM Maintenance and Storage Facility (MSF). The following describes the existing land uses located along the APM system that are not otherwise described with other main Project components, such as the CONRAC, ITFs, and Metro's proposed AMC 96th Street Transit Station.

Within the CTA, the existing land uses associated with the APM area are exclusively airport landside related, include parking structures, surface parking, roadways, and the Clifton A. Moore Administration Building. Extending east from the CTA, the APM guideway alignment would extend through the Century Boulevard/Sepulveda Boulevard interchange and through the Delta (Air Lines) Hangar Complex located to the south of Century Boulevard and then turn north along Vicksburg Avenue to W. 96th Street, turning east where the alignment passes through the existing LAX City Bus Center and continue to the proposed APM station at the proposed ITF West, and then continue east along W. 96th Street, extending through a parcel currently occupied by a restaurant (Burger King) and then to the proposed APM MSF that is proposed north of, and perpendicular to, the APM guideway. The APM MSF would be situated in the eastern portion of the Belford Area.

The Belford Area is approximately 19 acres and is generally bounded by Arbor Vitae Street to the north, Belford Avenue to the east, W. 98th Street to the south, and Airport Boulevard to the west. The subject area was formerly occupied by residential uses but is now largely vacant, having been included in a voluntary acquisition/relocation program established in 2000 at the request of the homeowners and residents to be relocated out of the area in lieu of soundproofing. Belford once contained 583 multi-family residential units within 49 different properties, but, as of As of August 2016, the Belford area contains one multi-family residential structure at the corner of Belford Avenue and W. 96th Street; Using 2010 U.S. Census records[28] and the City of Los Angeles Geographic Information System data[29], it has been estimated that approximately 22 residents remain in the Belford area.

As the APM guideway continues east along W. 96th Street from its connection with the APM MSF, it would pass through two parcels located on the west side of Airport Boulevard, which are currently occupied by industrial uses (i.e., China Airlines and Secom parcels, zoned M2-1), and on into Manchester Square where the ITF East and CONRAC are proposed.

Intermodal Transportation Facilities

The proposed ITF West is located on parcels that are currently used for airport parking and rental car company operations.

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[28] U.S. Department of Commerce, U.S. Census Bureau, 2010 Decennial Census Data, Available: http://factfinder.census.gov/, accessed February 24, 2016.

[29] City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

The proposed ITF East is located in the western portion of Manchester Square. Similar to the Belford area described above, Manchester Square was once primarily occupied by residential uses, but is now largely vacant, having also been included in the voluntary acquisition/relocation program that started in 2000 in conjunction with the LAX Soundproofing Program. The Manchester Square area comprises approximately 135 acres and is generally bounded by Arbor Vitae Street to the north, S. La Cienega Boulevard to the east, Century Boulevard to the south, and Aviation Boulevard to the west. Approximately 280 single-family residences and 1,705 multi-family residences on approximately 519 properties previously existed in Manchester Square; however, as of August 2016, the Manchester Square area contains 6 single-family residential structures and 31 multi-family residential units. Using 2010 U.S. Census records[30] and the City of Los Angeles Geographic Information System data[31], it has been estimated that approximately 508 residents remain in Manchester Square. There is also currently a school facility (Stella Middle Charter Academy and Bright Star Secondary Charter Academy) situated where the ITF East is proposed.

Consolidated Rental Car Facility

Similar to above, the proposed CONRAC is located within Manchester Square, which is now largely vacant, with the exception of several residential properties yet to be acquired.

Roadway Improvements

For the most part, areas that are proposed for roadway improvements include existing roads and/or associated roadway right-of-way, and existing parking lots. The most notable exception would be the area where W. 98th Street is proposed to be extended east from its current terminus at Bellanca Avenue across to Aviation Boulevard and on through Manchester Square where it would connect with La Cienega Boulevard. In addition to passing through areas within Manchester Square that are still occupied by residential parcels yet to be acquired, the proposed roadway segment between Bellanca Avenue and Aviation Boulevard would extend through two parcels currently occupied by a parking lot and a tour company (VIP Tours of California).

Potential Future Related Development

Areas proposed for potential future related development would include parcels already owned by LAWA that would be used in conjunction with construction of the proposed ground transportation facilities (i.e., areas used as temporary construction laydown/staging areas during development of the transportation facilities), as delineated on Figure 2-51. Such areas include: the two parcels between W. 96th Street and W. 98th Street on the east side of Avion Drive which is currently used for parking; the parcel northeast of the intersection of Airport Boulevard and W. 96th Street, which is in the Belford area and is currently vacant; the parcels along the west side of Airport Boulevard between Westchester Parkway and W. 96th Street, which are currently used for rental car operations; the parcel south of W. 96th Street approximately 400 feet east of Airport Boulevard, which is also part of the Belford area and is currently vacant; the parcel at the southeast corner of Arbor Vitae

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30 U.S. Department of Commerce, U.S. Census Bureau, 2010 Decennial Census Data, Available: http://factfinder.census.gov/, accessed February 24, 2016.

31 City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

Street and Aviation Boulevard, which is located within Manchester Square and is largely vacant, with the exception of a gas station on the corner and a two-story office building (LAX Recruitment and Training Center) east of the gas station; and, parcels located within the southern portion of Manchester Square between Aviation Boulevard and La Cienega Boulevard, which are largely vacant, with the exception of a motel (Travelodge) at the west end and a few (approximately six) residential parcels dispersed within the subject area.

4.8.3.2.2 Surrounding Area

The following describes the existing land uses surrounding the Project area boundaries, which, as noted above, are generally represented by the existing zoning designations shown in Figure 4.8-8.

City of Los Angeles

The City of Los Angeles community of Westchester is located just north of the boundaries of LAX, outside and north of the North Study Area. Existing uses within that area are characterized primarily by commercial, residential, and industrial uses. Existing land uses for non-airport areas along the southern boundary of the North Study Area include commercial uses, consisting mostly of hotels, parking structures, and office buildings, and some light-industrial uses. Existing land uses for non-airport areas near the South Study Area include light-industrial uses to the east.

City of El Segundo

The City of El Segundo is approximately 3,488 acres in size and is located outside and to the southwest of the North and South Study Areas. Existing uses in El Segundo nearest to the South Study Area include office and industrial development.

City of Hawthorne

The City of Hawthorne is approximately 3,892 acres in size and is separated from the South Study Area by the interchange for the I-105 and I-405 Freeways. Land uses adjacent to the I-105 and I-405 Freeways include single- and multi-family residential, and commercial.

City of Inglewood

The City of Inglewood is located east of LAX and covers approximately 5,823 acres. The predominant land uses within and adjacent to the North Study Area are airport commercial and other commercial uses. Multi-family residential uses are located east of the I-405 Freeway.

Unincorporated Los Angeles County

The community of Lennox is located east of the I-405 Freeway within unincorporated Los Angeles County. A small segment of Lennox extends along the southeast portion of the North Study Area, between La Cienega Boulevard and the I-405 Freeway. Land uses in this area include manufacturing and commercial development. Residential land uses are east of the I-405 Freeway, outside the North Study Area.

The community of Del Aire is approximately 650 acres in size and located south of LAX and the I-105 Freeway outside of the South Study Area. Existing land uses within Del Aire near the I-105 and I-405 Freeways include residential, manufacturing, office, and commercial development.

4.8.4 THRESHOLDS OF SIGNIFICANCE

A significant land use impact would occur if the proposed Project would result in the following conflicts, thereby causing physical environmental impacts:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

This threshold is derived from the State CEQA Guidelines Initial Study Checklist and the *L.A. CEQA Thresholds Guide*.[32] Per Appendix G of the State CEQA Guidelines and the *L.A. CEQA Thresholds Guide*, the emphasis of the plan consistency evaluation focuses on potential conflicts between the proposed Project and existing land use plans, policies, and regulations adopted to avoid or mitigate environmental effects. Determinations of significance are not based on inconsistency alone, but on instances where inconsistencies with plans, policies, and regulations would also result in physical impacts on the environment.

As noted earlier in this section, a project is considered to be consistent with a general plan and related planning documents if, considering all its aspects, it will further the objectives and policies of the plan or not obstruct their attainment. If a project is determined to be inconsistent with specific individual objectives or policies, but is largely consistent with the land use or the other goals and policies of that plan and would not preclude the attainment of the primary intent of the land use plan, the proposed Project would not be considered inconsistent with the plan. Nevertheless, in certain instances, amendments to the various plans are proposed to ensure consistency.

Thresholds and analysis relevant to land use compatibility, including consistency with applicable plans, in terms of degraded views, air quality, hazards, noise, population and housing, and surface transportation disruption are addressed in Sections 4.1, *Aesthetics*, 4.2, *Air Quality and Human Health Risk*, 4.6, *Hazards and Hazardous Materials*, 4.9, *Noise and Vibration*, 4.10, *Population and Housing* and 4.12, *Transportation/Traffic*, respectively.

4.8.5 IMPACT ANALYSIS

4.8.5.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both construction and operation of Phase 1 and Phase 2 of the proposed Project. Impacts associated with the Phase 1 improvements are addressed first, following by an analysis of the Phase 2 program features (potential future related development). The discussion begins with a description of

32 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

the changes and amendments to the existing regulatory planning documents that would occur with the proposed Project and then moves on to evaluate whether implementation of the proposed Project would conflict with an applicable land use plan, policy, or regulation to the extent that it would constitute a significant impact.

4.8.5.1.1 Proposed Land Use Plan Amendments

As discussed in Section 2.8, *Entitlements*, of Chapter 2, *Description of the Proposed Project,* and summarized below, implementation of the proposed Project would involve a number of land use plan amendments, including amendments to the General Plan (specifically amendments to the LAX Plan, the Westchester–Playa del Rey Community Plan, and Mobility Plan 2035) and, relative to zoning, the LAX Specific Plan. **Appendix C** contains the proposed textual amendments to the LAX Plan and **Appendix D** contains the proposed textual amendments to the LAX Specific Plan. Chapter 7, *Evaluation of Amendments to the LAX Plan and LAX Specific Plan,* discusses the amendments to the plans in more detail. Additionally, a zone change separate from, but related to, those associated with the LAX Specific Plan would occur, as further described below. Also, an amendment to the LAX Airport Layout Plan would be required, as further described below.

General Plan

<u>LAX Plan</u>

Implementation of the proposed Project would require amendments to the LAX Plan relative to the boundary of the Plan area, the land use subarea designations and associated maps presented in the Plan, and certain text within the Plan, as further described below. Appendix C contains a copy of the LAX Plan with the proposed text changes.

As shown in Figure 2-52, an amendment to the boundary of the LAX Plan is proposed to: add five areas into the LAX Plan, four of which are generally located between Century Boulevard and W. 96th Street east of Sepulveda Boulevard, along with one area located at the southeast corner of Aviation Boulevard and Arbor Vitae Street; and, remove an area located at the northwest corner of W. 98th Street and Airport Boulevard. The areas added into the LAX Plan would include certain parcels to be acquired in conjunction with proposed roadway and APM system improvements as well as certain parcels owned by LAWA, but not currently within the LAX Plan. The parcel proposed to be removed from the LAX Plan is not owned by LAWA nor is it needed for the development of the proposed ground transportation improvements.

Proposed amendments to the land use subarea designations set forth in the LAX Plan would include the addition of the following land use category, which would be described in Section 3.2 of the LAX Plan and reflected in Figure 1 of the LAX Plan, as amended:

- **Airport Landside Support Subarea** - The Airport Landside Support Subarea will support the Airport regional ground transportation network and allow for the development of commercial uses meeting the needs of passengers, visitors and employees of LAX, guests of hotels and employees of businesses in or around the LAX Specific Plan area. The primary allowable uses within Airport Landside Support Subarea include, but are not limited to: retail, restaurants, entertainment, hotels and offices.

In conjunction with this land use category, the following supporting policy is proposed to be added to the LAX Plan:

- **P1.** Allow development of a limited range of appropriate commercial uses, including retail commercial uses meeting the needs of passengers, hotel guests and employees in the area, on land not needed for ground transportation facilities.

This proposed land use category and subarea delineation would apply to the parcels identified for potential future related development (see Figure 2-51).

In conjunction with proposed amendments to the maps within the LAX Plan, including to Figure 1: LAX Land Use Map as noted above, Figure 2: Transportation Element – Regional Highways and Freeways would be amended to reflect the roadway system proposed for the LAX Landside Access Modernization Program Project.

Regarding amendments to the text of the LAX Plan, the majority of the proposed modifications would consist of clarifications and updates to the existing Goals and Objectives, as well as existing Policies and Programs, in the Plan, particularly as related to ground transportation, and would also include increased emphasis on policies and programs related to sustainability. Other notable modifications to the LAX Plan text include the addition of the Airport Landside Support Subarea land use category, described above, and updating the discussion of the Vision for LAX (Section 1.2 of the LAX Plan) to eliminate the discussion of the LAX SPAS, given that the SPAS process was completed several years ago.

Revisions to the Land Use section would include the removal of Policy P2, which limits airport capacity by restricting the number of gates to no more than 153 gates at LAX Master Plan build out. Although this language is removed as a policy, LAWA is still bound to the Stipulated Settlement which limits the number of aircraft gates to 153 if the number of annual passengers is at or above 75 million.[33] Text regarding the Airport Landside Area permitted uses would be revised to incorporate facilities and improvements that would be changed under the proposed Project. This would include minor editorial changes to the CTA; the provision for two ITFs; and clarification on the components and connections of the APM. This section would also remove text pertaining to landscaped buffer areas; this program would be replaced by the LAX Design Guidelines (see **Appendix B**). Amendments to the LAX Plan would provide for a new area: the Airport Landside Support Area.

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33 The Stipulated Settlement expired on December 31, 2015 except for the passenger gate provision which are in effect through December 31, 2020.

Westchester – Playa Del Rey Community Plan

The proposed Westchester-Playa del Rey Community Plan amendments would include map updates to conform to the boundary of the revised LAX Plan and to reflect roadway changes. More specifically, implementation of the proposed Project would require the acquisition of certain properties currently included in the Westchester-Playa del Rey Community Plan, which would be transferred to the LAX Plan as described above, and would also allow the transfer of the parcel located on the northeast corner of W. 98th Street and Airport Boulevard, which is not owned by LAWA nor is it needed for the proposed Project improvements, out of the LAX Plan and into the Westchester-Playa del Rey Community Plan. For the proposed addition to the Westchester-Playa del Rey Community Plan, the subject parcel would be assigned a Commercial land use designation, consistent with its existing use.

In addition to these proposed amendments to the Westchester-Playa del Rey Community Plan Generalized Land Use map, certain roadway improvements associated with the LAX Landside Access Modernization Program Project, such as the extension of W. 98th Street from its current terminus at Bellanca Avenue east into Manchester Square, would require amending the Community Plan Generalized Circulation map.

Mobility Plan 2035

Implementation of the proposed Project would require amendments to the Citywide General Plan Circulation System, which is reflected in the City's *Mobility Plan 2035,* in order to maintain consistency with the proposed classification of streets modified as part of the proposed Project. The proposed reclassification of roadway segments is identified in Figure 2-53, in Chapter 2, *Description of the Proposed Project*. The circulation system improvements proposed as part of the Project include the provision of bike lanes to increase the multi-model options and connections to the regional transit system for residents and employees in the area, at which modifications to the Bike Plan in the *Mobility Plan 2035* are proposed to reflect those improvements. The proposed Bike Plan modifications are shown on Figure 2-55, in Chapter 2, *Description of the Proposed Project*.

Zoning

LAX Specific Plan

Similar to the LAX Plan discussed above, amendments to the LAX Specific Plan are proposed relative to modifying the boundary of the LAX Specific Plan area, adding the Airport Landside Support Subarea land use designation, and making certain text revisions. Appendix D contains a copy of the LAX Specific Plan with the proposed text changes. The LAX Specific Plan boundary adjustment, including the addition of certain parcels and the removal of one parcel, and the delineation of subareas designated Airport Landside Support Subarea would be the same as what would occur for the LAX Plan, thereby providing consistency between the two plans. Figure 2-57 in Chapter 2, *Description of the Proposed Project*, shows the proposed LAX Specific Plan boundary and subareas.

In conjunction with the boundary adjustment, the parcels added to the LAX Specific Plan area would be rezoned from their current C2-2 Commercial designation to the LAX Zone designation. Also, parcels within the Belford Area that were formerly occupied by residential development and are currently zoned R3-1

Residential would be rezoned to LAX Zone. Figure 2-58 and Table 2-17 in Chapter 2, *Description of the Proposed Project*, indicate the exact locations of the parcels to be rezoned to LAX Zone.

The proposed addition of the Airport Landside Support Subarea to the text of the LAX Specific Plan would include delineation of permitted uses, prohibited uses, development standards, building heights, setbacks, parking requirements, and reference to the LAX Design Guidelines (Appendix B). Uses permitted in the Airport Landside Support Subarea, within the Specific Plan Area, subject to approval by the Executive Director: all of the uses permitted in the C2 Zone, as specified in Los Angeles Municipal Code 12.14, including, but not limited to: retail uses and restaurants; entertainment uses; hotels; offices; and, construction staging and laydown area. Prohibited uses include aircraft under power, and any building containing dwelling units. The development standards for this land use category specify that the total floor area of all development within the Airport Landside Support Subarea shall not exceed 900,000 square feet. The total floor area within Airport Landside Support subareas within Manchester Square, referred to as "Area 1" (see Figure 2-57), shall not exceed 600,000 square feet and the maximum allowable FAR for a lot shall be 1.2; and, the total floor area within Airport Landside Support subareas outside of Manchester Square, referred to as "Area 2" (see Figure 2-57), shall not exceed 600,000 square feet and the maximum allowable FAR for a lot shall be 0.9. Other requirements proposed for the LAX Specific Plan for this land use category that pertain to building heights, setbacks, parking requirements, and the LAX Design Guidelines are the same as those for the Airport Airside Subarea and Airport Landside Subarea.

Other text modifications proposed for the LAX Specific Plan pertain primarily to administrative procedures and definitions, and to the elimination of the requirements related to additional study requirements, such as SPAS and the LAX domestic passenger and airline market survey/study as these requirements are being fulfilled as part of the proposed Project (see Section 2.8.2).

Other Zone Changes

As noted above, the boundary adjustment to the LAX Plan and LAX Specific Plan would include the removal of the parcel at the northwest corner of W. 98th Street and Airport Boulevard. As such, that parcel is proposed to be rezoned from LAX Zone to C2-2 Commercial, which would be similar to other nearby parcels located outside the LAX Plan and LAX Specific Plan boundary, and consistent with existing uses.

4.8.5.1.2 Land Use Plan Consistency

SCAG Consistency

The overall goals of the 2012–2035 RTP/SCS are to (1) maximize mobility and accessibility for all people and goods in the region; (2) ensure travel safety and reliability for all people and goods in the region; (3) preserve and ensure a sustainable regional transportation system; (4) maximize the productivity of the transportation system; (5) encourage land use and growth patterns that facilitate transit and nonmotorized transportation; and (6) protect the environment and health of residents by improving air quality and encouraging active transportation (nonmotorized transportation, such as bicycling and walking). The proposed Project is a transportation improvement project that is designed to provide access options for employees and passengers of LAX, reduce traffic congestion on on-Airport and off-Airport roadways, provide connections to the regional transit system, includes provisions for pedestrian and bicycle facilities, and promote development that provides services for employees and hotel guests in the Century Boulevard corridor. Thus, the proposed Project is consistent with the 2012-2035 RTP/SCS overall goals.

Mobility is an important component of sustainability and integrated planning in the 2016 RTP/SCS. The proposed Project would be consistent with the policy framework of the RTP/SCS, as it would provide substantial ground access improvements that support the plan's goals as shown in **Table 4.8-1** below. The ground access improvements would also directly support the RTP/SCS aviation strategy that focuses on facilitating airport access to improve the functioning of the aviation system overall.

Table 4.8-1: Comparison of the Project with the RTP/SCS Policies

GOALS	PLAN CONSISTENCY
1. Align the plan investments and policies with improving regional economic development and competitiveness.	Consistent. The proposed Project includes implementation of ground access improvement projects identified in the RTP/SCS, implementation of which would have local and regional economic benefits by improving Airport access and reducing congestion.
2. Maximize mobility and accessibility for all people and goods in the region.	Consistent. Objective 3.3 of the LAX Design Guidelines section for Roadways and Streetscapes states that the proposed roadway improvements shall "integrate roadway, pedestrian, bicycle, transit, and landscaping improvements into an attractive, multi-modal, balanced and efficient network serving LAX and its passengers." This would improve mobility and accessibility for people and goods at the local and regional level.
3. Ensure travel safety and reliability for all people and goods in the region.	Consistent. An intent of the Roadways and Streetscapes section of the LAX Design Guidelines, which are specifically acknowledged in the proposed amendments to the LAX Specific Plan is to create safe roadways.
4. Preserve and ensure a sustainable regional transportation system.	Consistent. The proposed Project includes implementation of ground access improvements identified in the RTP/SCS, implementation of which would have local and regional economic benefits by improving airport access and reducing congestion.
5. Maximize the productivity of our transportation system.	Consistent. The proposed ground access improvements would improve airport access and reduce congestion, thereby improving productivity of the transportation system.
6. Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).	Consistent. The proposed Project would improve air quality by reducing vehicle congestion and by enhancing alternative forms of transportation, including bicycle and pedestrian connections.
7. Actively encourage and create incentives for energy efficiency, where possible.	Consistent. The proposed ground access improvements would reduce congestion, which would indirectly contribute to energy efficiency.
8. Encourage land use and growth patterns that facilitate transit and active transportation.	Consistent. The proposed Project includes land use plan amendments to facilitate the proposed ground access improvements, which includes improving transit and active transportation routes and connections.
9. Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies	Not applicable to the proposed Project.

SOURCE: 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; CDM Smith, August 2016.

PREPARED BY: CDM Smith, August 2016.

The proposed Project includes transportation management and transportation system management elements, connections to the regional transit system, and is being implemented to improve access options for passengers and employees of LAX and reduce traffic congestion and air quality emissions, all of which are consistent with the guiding policies of the 2016-2040 RTP/SCS. The 2016-2040 RTP/SCS also includes strategies supported by the proposed Project, which include projects that support regional and inter-regional airport ground access, local planning efforts by airport operators, and development of transit access to the region's airports. The proposed Project would provide connections to Metro's LAX/Crenshaw transit line and the planned regional bus facility at the AMC 96th Street Transit Station. As such, the proposed Project is also consistent with the strategies identified in the 2016-2040 RTP/SCS.

Additionally, the recently adopted 2016-2040 RTP/SCS identifies the proposed APM, ITFs, and CONRAC as ground access improvements at LAX that would support SCAG's regional planning policies. These Project components support the 2016-2040 RTP/SCS major initiative to improve airport access. As such, the proposed Project would be consistent with and not conflict with SCAG's regional planning goals and policies.

Los Angeles County Airport Land Use Plan

The ALUP provides goals and policies to promote land use compatibility and limit noise and safety conflicts in areas surrounding airports. The land use categories listed in the ALUP Land Use Compatibility Table do not specifically include transportation- or airport service–related uses; however, the Land Use Compatibility Table does recognize uses related to airport services as being acceptable in areas of high noise exposure that would normally be unsuitable for particular land use types. In delineating the compatibility of particular land use types relative to the level of community noise exposure (CNEL), the level of land use compatibility is defined in terms of being either "Satisfactory" or "Caution. Review Noise Insulation Needs" or "Avoid Land Use *Unless Related to Airport Services*" (emphasis added). In the case of the proposed Project, the proposed improvements and facilities are directly related to serving and enhancing access to, and ground transportation services for, LAX, as well as providing other airport landside support services. The proposed Project would not change aircraft noise or affect the CNEL contours, as the proposed Project would not change aircraft fleet mix, aircraft operations, or aircraft arrival and departure paths.

The proposed Project would include development of facilities that are compatible with the existing CNEL noise levels in the Project area and would eliminate existing residential and school uses that are incompatible with the existing CNEL noise levels in the Project area. However, if the Stella Middle Charter Academy and Bright Star Secondary Charter Academy facilities located at 5431 W. 98th Street cannot obtain permanent facilities at the time the properties are needed for construction, temporary facilities would be constructed on the LAX Northside area. Modular facilities may be potentially constructed or rented to allow for temporary operations of the schools for a period of up to three years, or until the new school facilities are secured and available for use. If this were to occur, the temporary relocation site would keep the school facilities within the CNEL 65 dB noise contour, as they are today. The proposed Project includes an amendment to the LAX Specific Plan to permit temporary uses of Airport property for relocation of facilities.

The ALUP also contains policies addressing safety, airspace hazards, and prohibiting uses that negatively affect safe air navigation. As noted earlier, none of the proposed Project improvements are located within any of the RPZs at LAX. LAWA is coordinating with FAA to ensure that none of the proposed Project elements would cause an obstruction to air navigation or interfere with communications between the air traffic controllers and pilots. Based on the above, implementation of the proposed Project would be consistent with the Los Angeles County ALUP. Thus, the proposed Project would be consistent with the ALUP's policy of minimizing the public's exposure to excessive noise and safety hazards within areas around public airports.

Notwithstanding, the proposed Project includes amendments to the City General Plan (i.e., the LAX Plan, the Westchester – Playa Del Rey Community Plan, and the Mobility Plan 2035), and also amendments to the LAX Specific Plan, which would require a review and consistency determination by the ALUC. The proposed amendments are consistent with ALUP policies in regards to noise, safety, airspace hazards, and land use/noise compatibility criteria for new proposed land uses.

4.8.5.1.3 City of Los Angeles General Plan Framework

The Framework Element includes primary land use objectives that call for the City to accommodate land use decisions that support existing and future business needs of the City; facilitate a reduction in vehicular trips, vehicle miles traveled, and air pollution; and plan for the provision of adequate supporting transportation and utility infrastructure. The proposed Project is intended to support and accommodate the business and transportation needs of Los Angeles. In addition, the proposed ground transportation components are intended to reduce traffic congestion within the CTA and on surrounding roadways, as well as reducing vehicle miles traveled, thus reducing air pollutant emissions. As shown in **Table 4.8-2** below, the proposed Project is supportive of the policies in the Framework Element, which are related to the Project's location near an identified Regional Center and to economic policies that specifically address LAX.

Table 4.8-2: Comparison of the Project with the Applicable Policies in the General Plan Framework Element

GOALS	PLAN CONSISTENCY
Policy 3.10.1: Accommodate land uses that serve a regional market in areas designated as "Regional Center." Retail uses and services that support and are integrated with the primary uses shall be permitted. The range and densities/intensities of uses permitted in any area shall be identified in the community plans.	Consistent. The proposed Project includes implementation of ground access improvements that would support LAX, and other uses in the vicinity by improving multi-modal connections and reducing congestion.
Policy 3.10.2: Accommodate and encourage the development of multi-modal transportation centers, where appropriate.	Consistent. The proposed Project would include implementation of ground access improvements including multi-modal transportation connections to and from LAX.
Policy 7.2.13: Facilitate environmentally sound operations and expansion of the Port of Los Angeles and the Los Angeles International Airport as major drivers of the local and regional economy.	Consistent. The proposed Project includes implementation of ground access improvements that would have local and regional economic benefits by improving Airport access and reducing congestion.
Policy 7.3.4: Recognize the crucial role that the Port of Los Angeles and the Los Angeles International Airport play in future employment growth by supporting planned Port and Airport expansion and modernization that mitigates its negative impacts.	Consistent. The proposed Project includes implementation of ground access improvements that would have local and regional benefits through the improvement of Airport access and reduction of congestion.

SOURCE: City of Los Angeles, Department of City Planning, *The Citywide General Plan Framework, An Element of the City of Los Angeles General Plan, Chapter 3, Land Use*, Originally adopted December 11, 1996, Re-adopted August 8, 2001, Available: http://cityplanning.lacity.org/Cwd/Framwk/contents.htm; CDM Smith, August 2016.

PREPARED BY: CDM Smith, August 2016.

The proposed Project would support, and be consistent with, the policy goals of the Framework Element.

4.8.5.1.4 Mobility Plan 2035

The proposed Project would improve the landside transportation system serving the Airport, thereby improving access to and from LAX and relieving congestion on Airport and surrounding roadways. The proposed ground access improvements include vehicle, transit¸ bicycle and pedestrian access and connections. In addition, LAWA plans to establish and enhance programs to encourage Airport and other employees to use alternative means of transportation. This is consistent with the overall aim of the Mobility Plan 2035 to achieve a transportation system that balances the needs of all road users. As shown in **Table 4.8-3** below, the proposed roadway improvements would be consistent with, and not conflict with, the applicable policies of the Mobility Plan 2035. Additionally, as described in the section above addressing the proposed plan amendments and zone change, the roadway and bicycle maps in the Mobility Plan 2035 would be amended to reflect the proposed new and modified roadway configurations and classification and the proposed bicycle lanes. With the approval of the proposed amendments, the proposed Project would be consistent with Mobility Plan 2035 roadway and bicycle maps.

4.8.5.1.5 LAX Plan

The proposed Project would improve the landside transportation system serving the Airport, which would support the overall objective of the LAX Plan to promote an arrangement of Airport uses to encourage and contribute to the modernization of the Airport in an orderly and flexible manner. **Table 4.8-4** below presents consistency of the proposed Project with applicable existing policies of the LAX Plan. The proposed Project includes amendments to the LAX Plan to update the Vision for LAX; update the goals and objectives to reflect the proposed Project; add a description of a new Airport Landside Support Area; update policies to reflect the proposed Project and other programs; and remove text regarding projects that are no longer relevant. Plan Areas would be updated to include: additional areas that are currently located in the Westchester-Playa del Rey Community Plan; areas in which the proposed facilities would be located; and to change the designation of the Belford Special Study Area to Airport Landside. The exact language of the LAX Plan amendments is included in Appendix C, *LAX Plan Revisions*. In addition, LAX Plan maps and diagrams would be updated to reflect the proposed plan area changes. These amendments are necessary to obtain consistency between the proposed Project and the LAX Plan. Chapter 7, *Evaluation of Amendments to the LAX Plan and LAX Specific Plan,* discusses the amendments to the plans in more detail.

The policies presented in Table 4.8-4 pertain to the Airport Landside land use designation and circulation and access, which are the most relevant to the proposed Project.

Table 4.8-3 (1 of 5): Comparison of the Project with the Applicable Policies of Mobility Plan 2035

PLAN POLICIES: SAFETY FIRST	PLAN CONSISTENCY
1.1 Roadway User Vulnerability: Design, plan, and operate streets to prioritize the safety of the most vulnerable roadway user.	Consistent. Section 3.4.2 of the LAX Design Guidelines, as related to Site Access and Circulation specify that roadway improvements be designed to minimize potential conflict between all users.
1.2 Complete Streets: Implement a balanced transportation system on all streets, tunnels, and bridges using complete streets principles to ensure the safety and mobility of all users.	Consistent. Objective 3.3 of the LAX Design Guidelines section for Roadways and Streetscapes states that the proposed roadway improvements shall "integrate roadway, pedestrian, bicycle, transit, and landscaping improvements into an attractive, multi-modal, balanced and efficient network serving LAX and its passengers."
1.3 Safe Routes to Schools: Prioritize the safety of school children on all streets regardless of highway classifications.	Consistent. Section 3.4.2 of the LAX Design Guidelines, as related to Site Access and Circulation, establishes guidelines that Project roadway design should "Prioritize pedestrian connections for site access to minimize conflicts and increase safety."
1.4 Design Safe Speeds: Design streets to Targeted Operating Speeds as defined in the Complete Streets Design Guide.	Consistent. An intent of the Roadways and Streetscapes section of the LAX Design Guidelines is to create safe roadways.
1.5 Railroad Crossings: Reduce conflicts and improve safety at railroad crossings through design, planning, and operation.	Consistent. The Project features grade separation between roadways, the APM and the Metro line in order to avoid conflict.
1.6 Multi-Modal Detour Facilities: Design detour facilities to provide safe passage for all modes of travel during times of construction.	Consistent. During project construction, a construction traffic management control plan would be implemented that would specify detour facilities to provide safe passage for all modes of travel during times of construction.
1.7 Regularly Maintained Streets: Enhance roadway safety by maintaining the street, alley, tunnel, and bridge system in good to excellent condition.	Consistent. The proposed roadways would be integrated into the existing Los Angeles and LAWA maintained street network.
1.8 Goods Movement Safety: Ensure that the goods movement sector is integrated with the rest of the transportation system in such a way that does not endanger the health and safety of residents and other roadway users.	Consistent. The proposed Project would improve ground access to and from LAX, which would improve traffic movement and reduce congestion for all vehicles in the vicinity, which would also improve goods movement.
1.9 Recreational Trail Separation: Balance user needs on the City's public recreational trails.	Not Applicable. Project does not include recreation trail areas.
PLAN POLICIES: WORLD CLASS INFRASTRUCTURE	**PLAN CONSISTENCY**
2.1 Adaptive Reuse of Streets: Design, plan, and operate streets to serve multiple purposes and provide flexibility in design to adapt to future demands.	Consistent. Objective 3.3 of the LAX Design Guidelines section for Roadways and Streetscapes states that the proposed roadway improvements shall "integrate roadway, pedestrian, bicycle, transit, and landscaping improvements into an attractive, multi-modal, balanced and efficient network serving LAX and its passengers."
2.2 Complete Streets Design Guide: Establish the Complete Streets Design Guide as the City's document to guide the operations and design of streets and other public rights-of-way.	Not applicable. Policy relates to City publication of a design guide.
2.3 Pedestrian Infrastructure: Recognize walking as a component of every trip, and ensure high quality pedestrian access in all site planning and public right-of-way modifications to provide a safe and comfortable walking environment.	Consistent. Section 3.4.2 of the LAX Design Guidelines, as related to Site Access and Circulation, establishes guidelines that Project roadway design should "Prioritize pedestrian connections for site access to minimize conflicts and increase safety."

Table 4.8-3 (2 of 5): Comparison of the Project with the Applicable Policies of Mobility Plan 2035

PLAN POLICIES: WORLD CLASS INFRASTRUCTURE	PLAN CONSISTENCY
2.4 Neighborhood Enhanced Network: Provide a slow speed network of locally serving streets.	Not applicable. Project area does not include local neighborhood streets.
2.5 Transit Network: Improve the performance and reliability of existing and future bus service.	Consistent. The Project would provide an APM connection at the Metro's proposed AMC 96th Street Transit Station. which includes a new bus facility, and would improve bus circulation within the Airport area by reducing passenger vehicle traffic that would otherwise occur without the Project.
2.6 Bicycle Networks: Provide safe, convenient, and comfortable local and regional bicycling facilities for people of all types and abilities.	Consistent. The Project includes new bicycle lanes that would connect with bicycle lanes outside the Project area and would link the CTA with the other landside components. Bicycle parking would be provided at all Project components.
2.7 Vehicle Network: Provide vehicular access to the regional freeway system.	Consistent. The Project includes enhanced connections to Interstate 405.
2.8 Goods Movement: Implement projects that would provide regionally significant transportation improvements for goods movement.	Not applicable. Project does not make regionally significant changes to the transportation network affecting goods movement.
2.9 Multiple Networks: Consider the role of each mode enhanced network when designing a street that includes multiple modes.	Consistent. The Roadways and Streetscapes section of the LAX Design Guidelines presents a balanced approach to multi-modal street design.
2.10 Loading Areas: Facilitate the provision of adequate on and off-street loading areas.	Consistent. The LAX Design Guidelines for Site Access and Circulation state that automobile and bus pick-up/drop-off locations should be designed to be easily accessible and to minimize pedestrian conflicts.
2.11 Transit Right-of-Way Design: Set high standards in designing public transit rights-of-way that considers user experience and supports active transportation infrastructure.	Consistent. The LAX Specific Plan Design Guidelines are intended to support user experience and transit usage.
2.12 Walkway and Bikeway Accommodations: Design for pedestrian and bicycle travel when rehabilitating or installing a new bridge, tunnel, or exclusive transit right-of-way.	Consistent. The LAX Design Guidelines specify that hotels, offices and other uses, plus new future development should have clear, direct and attractive pedestrian and bicycle connections to the APM station.
2.13 Highway Preservation and Enhancement: Support the preservation and enhancement of the state highways consistent with the RTP/SCS and the goals/policies of the General Plan.	Not applicable. Project does not involve changes to state highways.
2.14 Street Design: Designate a street's functional classification based upon its current dimensions, land use context, and role.	Consistent. The LAX Specific Plan Design Guidelines specify functional classifications based on design, context and role.
2.15 Allocation of Transportation Funds: Expand funding to improve the built environment for people who walk, bike, take transit, and for other vulnerable roadway users.	Consistent. Although the Project does not allocate transportation funds, it would improve the built environment in the Project Area for people who walk, bike, and take transit.
2.16 Scenic Highways: Ensure that future modifications to any scenic highway do not impact the unique identity or characteristic of that scenic highway.	Not applicable. Project does not involve scenic highways.
2.17 Roadway Widenings: Carefully consider the overall implications (costs, character, safety, travel, infrastructure, environment) of widening a street before requiring the widening, even when the existing right of way does not include a curb and gutter or the resulting roadway would be less than the standard dimension.	Consistent. The street widths specified in the LAX Specific Plan Design Guidelines were determined based on traffic studies completed for the Landside Access Modernization Program Project as well as other traffic evaluations completed by LAWA.

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Table 4.8-3 (3 of 5): Comparison of the Project with the Applicable Policies of Mobility Plan 2035

PLAN POLICIES: ACCESS FOR ALL ANGELENOS	PLAN CONSISTENCY
3.1 Access for All: Recognize all modes of travel, including pedestrian, bicycle, transit, and vehicular modes - including goods movement – as integral components of the City's transportation system.	Consistent. Objective 3.3 of the LAX Design Guidelines section for Roadways and Streetscapes states that the proposed roadway improvements shall "integrate roadway, pedestrian, bicycle, transit, and landscaping improvements into an attractive, multi-modal, balanced and efficient network serving LAX and its passengers."
3.2 People with Disabilities: Accommodate the needs of people with disabilities when modifying or installing infrastructure in the public right-of-way.	Consistent. The LAX Design Guidelines section Roadways and Streetscapes states that crosswalk infrastructure accommodate people in wheelchairs, in accordance with the Americans with Disabilities Act (ADA).
3.3 Land Use Access and Mix: Promote equitable land use decisions that result in fewer vehicle trips by providing greater proximity and access to jobs, destinations, and other neighborhood services.	Consistent. The Project is intended to reduce congestion and vehicle trips by optimizing the ground transportation functions and connections at LAX.
3.4 Transit Services: Provide all residents, workers and visitors with affordable, efficient, convenient, and attractive transit services.	Consistent. The Project is intended to enhance connectivity between the Airport and Metro's bus and rail services.
3.5 Multi-Modal Features: Support "first-mile, last-mile solutions" such as multi-modal transportation services, organizations, and activities in the areas around transit stations and major bus stops (transit stops) to maximize multi-modal connectivity and access for transit riders.	Consistent. The Project features multi-modal transportation centers and would provide connections to transit and transfer points for commercial shuttles. Bicycle facilities and pedestrian streetscape elements are also part of the Project.
3.6 Regional Transportation & Union Station: Continue to promote Union Station as the major regional transportation hub linking Amtrak, Metrolink, Metro Rail, and high-speed rail service.	Not applicable. Project is not located near Union Station.
3.7 Regional Transit Connections: Improve transit access and service to major regional destinations, job centers, and inter-modal facilities.	Consistent. The Project is intended to enhance connectivity between the Airport and Metro's bus and rail services.
3.8 Bicycle Parking: Provide bicyclists with convenient, secure and well maintained bicycle parking facilities.	Consistent. Bicycle parking would be provided at the East ITF and West ITF.
3.9 Increased Network Access: Discourage the vacation of public rights-of-way.	Consistent. The Project would reconfigure some existing roadways and create new roadways in order to improve the connectivity of the roadway network in the vicinity of the Airport.
3.10 Cul-de-sacs: Discourage the use of cul-de-sacs that do not provide access for active transportation options.	Not applicable. No cul-de-sacs are proposed.
3.11 Open Streets: Facilitate regular "open street" events and repurposing of the public right of way.	Not applicable. Implementation of this policy is at discretion of City departments other than LAWA.
3.12 Proposed Streets: Plan for and accommodate future growth areas through the identification of "proposed streets" during the community planning process.	Consistent. The Project proposes new streets in order to accommodate the future development of the Airport area.

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Table 4.8-3 (4 of 5): Comparison of the Project with the Applicable Policies of Mobility Plan 2035

PLAN POLICY: COLLABORATION, COMMUNICATION & INFORMED CHOICES	PLAN CONSISTENCY
4.1 New Technologies: Support new technology systems and infrastructure to expand access to transportation choices.	Consistent. The Project includes an APM that would utilize new technology to expand transportation choices.
4.2 Dynamic Transportation Information: Support a comprehensive, integrated transportation database and digital platform that manages existing assets and dynamically updates users with new information.	Consistent. The Project includes an APM and a Transportation Management program that would utilize new technology to expand transportation choices.
4.3 Fair and Equitable Treatment: Ensure the fair and equal treatment of people of all races, cultures, incomes and education levels with respect to the development and implementation of citywide transportation policies and programs.	Consistent. The APM would be accessible to all Angelinos.
4.4 Community Collaboration: Continue to support the role of community engagement in the design outcomes and implementation of mobility projects.	Consistent. LAWA has engaged with the community in developing this Project.
4.5 Improved Communication: Facilitate communication between citizens and the City in reporting on and receiving responses to non-emergency street improvements.	Consistent. The Project would not inhibit such communication. Additionally, during project construction, Mitigation Measure MM-ST (LAMP)-1 requires construction traffic management plans to be implemented that will include notification and signage of street improvements.
4.6 Data-Driven Prioritization of Projects: Make the most of limited financial resources by utilizing data to prioritize transportation projects based upon safety, public health, equity, access, vulnerable social characteristics, social benefits, and/or economic benefits.	Not applicable. Policy addresses implementation of City programs not within the scope of this Project.
4.7 Performance Evaluation: Evaluate performance of new transportation strategies through the collection and analysis of data.	Not applicable. Policy addresses implementation of City programs not within the scope of this Project.
4.8 Transportation Demand Management Strategies: Encourage greater utilization of Transportation Demand Management (TDM) strategies to reduce dependence on single-occupancy vehicles.	Consistent. The Project includes a Transportation Demand Management program as a mitigation measure which would include strategies to support alternative transportation modes, including transit, to reduce dependence on single-occupancy vehicles.
4.9 Transportation Management Organizations: Partner with the private sector to foster the success of Transportation Management Organizations (TMOs) in the City's commercial districts.	The Project includes formation of a new Transportation Management Association (TMA) as a mitigation measure, which could include coordination with the private sector if/as feasible.
4.10 Public-Private Partnerships: Encourage partnerships with community groups (residents and business/property owners) to initiate and maintain enhanced public rights-of-way projects.	Consistent. LAWA is issuing RFPs for elements of the Project that will be public-private partnerships.
4.11 Cohesive Regional Mobility: Communicate and partner with the Southern California Association of Governments (SCAG), Los Angeles County Metropolitan Transportation Authority (Metro), and adjacent cities and local transit operators to plan and operate a cohesive regional mobility system.	Consistent. In developing the Project, LAWA has communicated with SCAG, Metro and other cities and agencies regarding a cohesive regional mobility system.
4.12 Goods Movement: Increase public awareness about the importance and economic value of goods movement in the Los Angeles region.	Not applicable. Policy addresses implementation of City programs not within the scope of this Project.

Table 4.8-3 (5 of 5): Comparison of the Project with the Applicable Policies of Mobility Plan 2035

PLAN POLICY: COLLABORATION, COMMUNICATION & INFORMED CHOICES	PLAN CONSISTENCY
4.13 Parking and Land Use Management: Balance on-street and off-street parking supply with other transportation and land use objectives.	Consistent. The Project includes new off-street parking facilities intended to more effectively meet the parking needs of the Airport.
4.14 Wayfinding: Provide widespread, user-friendly information about mobility options and local destinations, delivered through a variety of channels including traditional signage and digital platforms.	Consistent. The LAX Specific Plan Design Guidelines would provide enhanced wayfinding.
4.15 Public Hearing Process: Require a public hearing for the proposed removal of an existing class II or IV bicycle facility.	Consistent. This EIR has been prepared to comply with CEQA; the process will include public hearings.
PLAN POLICY: CLEAN ENVIRONMENTS & HEALTHY COMMUNITIES	**PLAN CONSISTENCY**
5.1 Sustainable Transportation: Encourage the development of a sustainable transportation system that promotes environmental and public health.	Consistent. The intent of the Project is to create a sustainable ground transportation infrastructure for the Airport.
5.2 Vehicle Miles Traveled (VMT): Support ways to reduce VMT per capita.	Consistent. The Project would facilitate transit connection to the Airport, reducing VMT per capita.
5.3 Alternative Metrics: Support a range of transportation metrics to evaluate the multiple purposes that streets serve.	Not applicable. Policy addresses implementation of City programs not within the scope of this Project.
5.4 Clean Fuels and Vehicles: Continue to encourage the adoption of low and zero emission fuel sources, new mobility technologies, and supporting infrastructure.	Consistent. The Project would incorporate electric vehicle charging stations within the new parking facilities.
5.5 Green Streets: Maximize opportunities to capture and infiltrate stormwater within the City's public right-of-ways.	Consistent. The LAX Specific Plan Design Guidelines include streetscape landscaping areas that can capture and infiltrate stormwater.

SOURCE: City of Los Angeles, Department of City Planning, *Mobility Plan 2035, An Element of the General Plan*, adopted January 20, 2016, Available: http://planning.lacity.org/documents/policy/mobilityplnmemo.PDF.; Meridian Consultants, LLC, June 2016; CDM Smith, August 2016.

PREPARED BY: Ricondo & Associates, Inc., August 2016

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Table 4.8-4 (1 of 2): Comparison of the Project with the Applicable Policies of the LAX Plan[1/]

PLAN POLICIES: AIRPORT LANDSIDE	PROJECT CONSISTENCY
P1. Ensure that the scale and activity level of airport facilities appropriately relates to any abutting neighborhood edges.	Consistent. The Project components would be positioned so as not to abut a neighborhood edge.
P2. Develop a connection between Airport Landside facilities and nearby Metropolitan Transit Authority (MTA) facilities.	Consistent. The proposed APM would connect to the Metro Crenshaw/LAX light rail line along Aviation Boulevard (currently under construction).
P3. Develop connections between Airport Landside facilities and the regional ground transportation network, defined as major and secondary highways, freeways, and public transit systems.	Consistent. The proposed ITFs would facilitate passenger connections to bus lines and other shuttles. Road improvements are proposed that would provide efficient connection from Interstate 405 to the CONRAC and the ITF East.
P4. Develop direct links from each major Airport Landside facility to other Airport Landside and Airport Airside facilities.	Consistent. The APM would connect the proposed CONRAC and ITFs with the CTA terminals.
P5. Provide adequate employee parking and short-term and long-term visitor parking facilities.	Consistent. The proposed ITFs are intended to provide additional parking to meet the future needs of LAX.
P6. Locate airport uses and activities with the potential to adversely affect nearby land uses through noise, light spill-over, odor, vibration, and other consequences of airport operations and development as far from, or oriented away from adjacent residential neighborhoods as feasible.	Consistent. The Project components have not been located adjacent to residential neighborhoods. The former residential neighborhoods of Manchester Square and Belford were identified as incompatible and have been acquired by LAWA such that the residential uses could be removed and repurposed for compatible uses.
P7. Provide and maintain landscaped buffer areas along the southern boundary of Airport Airside that include setbacks, landscaping, screening, or other appropriate view sensitive uses with the goal of avoiding land use conflicts, shielding lighting, enhancing privacy, and better screening view of airport facilities from adjacent residential uses	Consistent. The proposed Project must comply with the LAX Design Guidelines, which includes guidelines for landscaping and setbacks. This includes promoting land use compatibility between the Airport and surrounding uses.
P8. Establish a Landscape Maintenance Program for parcels acquired in order to minimize visual impacts on adjacent residents, until the parcels are developed for airport purposes.	Consistent. The proposed Project must comply with the LAX Design Guidelines which includes guidelines for landscaping.

Table 4.8-4 (2 of 2): Comparison of the Project with the Applicable Policies of the LAX Plan[1/]

PLAN POLICIES: CIRCULATION AND ACCESS	PROJECT CONSISTENCY
P1. Develop direct links from each major Airport Airside and Airport Landside facility to other Airport Landside and Airport Airside facilities, as appropriate.	Consistent. The APM would connect the proposed CONRAC and ITFs with the CTA terminals.
P2. Connect airport facilities to, and to the extent feasible, improve the safety, operation, and mobility of, the regional ground transportation network.	Consistent. The proposed ITFs would facilitate passenger connections to bus lines and other shuttles. Road improvements are proposed that would provide efficient connection from Interstate 405 to the CONRAC and the ITF.
P3. Develop and construct at least eight FlyAway service terminals in regional locations that serve LAWA and encourage development of other FlyAway services for other airports in the region.	This policy would be replaced under the proposed Project with a policy to implement a Transportation Management System, with FlyAways as one component. The proposed Project would implement transportation management policies and programs and as such is consistent with the proposed policy.
P4. Provide facilities that encourage transit ridership	Consistent. The Project would connect to the Metro Crenshaw/LAX light rail line along Aviation Boulevard (currently under construction).
P5. Consolidate rental car facilities	Consistent. The Project would create a CONRAC.
P6. Develop safe and efficient curbside check-in facilities.	Consistent. The Project would create a new drop-off area at the ITF West.
P7. Provide convenient short- and long-term parking facilities.	Consistent. The proposed ITFs are intended to provide additional parking to meet the future needs of LAX.
P8. Develop a connection point between the airport and MTA facilities.	Consistent. The Project would connect to the Metro Crenshaw/LAX light rail line along Aviation Boulevard (currently under construction).
P9. Provide dedicated employee parking facilities	Consistent. The proposed ITFs are intended to provide additional parking to meet the future needs of LAX.

NOTE:

1/ The LAX Plan was last amended in 2013.

SOURCE: City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.; Meridian Consultants, LLC, June 2016; CDM Smith, August 2016.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

4.8.5.1.6 Westchester-Playa Del Rey Community Plan

Although the proposed LAX Landside Access Modernization Program components are primarily within the LAX Plan area, a portion of the APM guideway and roadway improvements would be within the Westchester-Playa Del Rey Community Plan area. The proposed Project would require the acquisition of some properties currently included in the Westchester-Playa del Rey Community Plan. In addition, the proposed Project would alter some roadway configurations within the Westchester-Playa del Rey Community Plan area. Therefore, the Project would require amendments to the maps in the Westchester–Playa del Rey Community Plan to conform the boundary of this plan area to the revised boundary for the LAX Plan and to reflect roadway changes. These changes would be consistent with the existing zoning and uses.

As previously described, the Westchester-Playa Del Rey Community Plan includes a goal to coordinate the development of LAX with the surrounding communities. The proposed Project would serve to improve access to and from LAX and relieve congestion on surrounding roadways and therefore, would be consistent with the Westchester-Playa Del Rey Community Plan as shown in **Table 4.8-5** below. Therefore, the proposed Project would be consistent with, and not conflict with, the applicable land use goals and policies of the Westchester-Playa Del Rey Community Plan.

Table 4.8-5: Comparison of the Project with the Applicable Policies of the Westchester-Playa Del Rey Community Plan

POLICIES RELATED TO LAX	PROJECT CONSISTENCY
20-1.1 Strengthen coordination between LAWA and the relevant City departments, other agencies (MTA), and adjacent communities in the planning and implementation of all major LAX projects	Consistent. The planning of the Project has involved extensive coordination with City departments and other agencies as well as community outreach efforts.
20-2.1 Encourage attractive and effective buffers such as transitional land use, landscaping, open space, etc. between LAX and the Westchester-Playa Del Rey Community.	Consistent: The Project would incorporate and implement design standards that would establish buffers between the Project components and the community.
20-3.1 Implement appropriate street and highway improvements in the community, and particularly the area surrounding LAX to alleviate traffic congestion.	Consistent: A primary objective of the Project is to reduce traffic congestion associated with LAX by implementing several Project components, including street improvements.
20-3.2 Improve and better coordinate public transportation service to and from LAX.	Consistent. The Project would connect to the Metro Crenshaw/LAX light rail line along Aviation Boulevard (currently under construction).
20-3.3 Improve linkage with the Century Corridor, remote parking facilities, etc. to minimize traffic congestion and improve access to area businesses and amenities.	Consistent: The purpose of the proposed ground transportation facilities is to reduce congestion along the Century Corridor by providing an alternative method (the APM) for Airport travelers to reach the CTA.
20-4.1 Coordinate the development and operation of LAX with the local community to create economic opportunities where feasible.	Consistent. The long-term vision for the Project would create greater economic opportunity through enhanced transportation functionality and the development potential of the Landside Support Subarea.
20-4.2 Provide community serving uses and services on airport-owned property, where feasible, to benefit Westchester-Playa del Rey and the surrounding communities.	Consistent. The potential future related development envisioned for the Landside Support Subarea would primarily serve LAX travelers. However, the potential uses that could be developed in those locations could also serve the local community.

SOURCE: City of Los Angeles, Department of City Planning, *Westchester - Playa del Rey Community Plan*, adopted April 13, 2004, as amended, Available: http://planning.lacity.org/complan/pdf/WchstrCPTXT.pdf; Meridian Consultants, LLC., June 2016; CDM Smith, August, 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

4.8.5.1.7 LAX Specific Plan

The LAX Specific Plan provides regulatory controls and ensures the orderly development of LAX consistent with the LAX Plan. The proposed LAX Landside Access Modernization Program components are currently or, with the proposed zone change, would be located within the Airport Airside and Airport Landside Subareas (although some of the APM guideway and roadway improvements would occur outside of the LAX Specific Plan area The proposed Project would require amendments to the LAX Specific Plan to update the text of the plan (see Appendix D and Chapter 7) to reflect the proposed transportation components. Amendments would include: changes in the text of the LAX Specific Plan to facilitate implementation of the programs and policies in the plan; the addition of an Airport Landside Support Subarea; reorganization of text for consistency and clarity; removal of the parking regulations which are specific to the LAX Master Plan; clarification of which parcels within the LAX Specific Plan are subject to the trip cap; and text on the LAX Design Guidelines (see Appendix B), as well as updates to the associated figures. The LAX Specific Plan would also be amended to allow the Executive Director to authorize the sale, dispensing, and consumption of alcohol beverages within sterile areas of the Airport or related off-site sterile areas without having to obtain a Conditional Use Permit from the Department of City Planning. The exact language of the LAX Specific Plan amendments is included in Appendix D, *LAX Specific Plan Revisions*. In addition, LAX Specific Plan maps and diagrams would be updated to reflect the proposed plan area changes. These amendments are necessary to obtain consistency between the proposed Project and the LAX Specific Plan. Chapter 7, *Evaluation of Amendments to the LAX Plan and LAX Specific Plan,* discusses the amendments to the plans in more detail.

The proposed Project improvements are consistent with the intent of the Airport Landside Subarea, which is to allow for the safe and efficient operation of Airport facilities, the primary function of which is to provide access to the Airport and process passengers. The proposed addition of the Airport Landside Support Subarea land use category would complement the intent of the Airport Landside Subarea. Based on the above, with approval of the proposed LAX Specific Plan amendments to ensure consistency, the proposed Project would be consistent with the LAX Specific Plan.

As noted earlier in the discussion of existing conditions, the LAX SPAS completed in 2013 identified a Staff-Recommended Alternative that included ground transportation system improvements for LAX. The improvements proposed for the Landside Access Modernization Program Project reflect a refinement, and more detailed design and evaluation, of the ground transportation system identified in the SPAS. The proposed Project would, therefore, be consistent with the plan that resulted from the SPAS process.

4.8.5.1.8 Los Angeles Planning and Zoning Code

The proposed LAX Landside Access Modernization Program Project components would be required to comply with the LAX Specific Plan as described above, and as amended, and thus would be consistent with LAX Zone requirements. Changes to existing uses and zoning of property that is being added to or removed from the LAX Specific Plan would be consistent with ALUP policies concerning compatible uses in the areas adjacent to LAX. These parcels are currently zoned C2-1, C2-2, M2-1, and R3-1. Property zoned C2 and M2 are consisting with the LAX Zone. Properties zoned R3-1 are inconsistent with the LAX Zone; as these parcels are contained within the CNEL 65 dB noise contour, they are incompatible with the Airport and are identified as such according to the policies of the ALUP. Rezoning of these parcels would make them consistent with the policies of the ALUP and planned land uses.

4.8.5.1.9 Summary

Based on the above, the Project be inconsistent with the existing LAX Plan, LAX Specific Plan, and zoning. However, the Project would amend these plans and change the zoning so that the proposed Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be less than significant.

4.8.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The potential future related development of parcels needed for construction laydown and staging areas could occur after construction of the proposed Project. The parcels proposed for potential future related development are located adjacent to the CONRAC, the ITF East, the APM MSF, and the ITF West (see Figure 2-51). While there are no specific plans for development of these parcels at this time, the development of these parcels could accommodate up to 900,000 sq. ft. of commercial development. Land use designations and design guidelines have been developed to guide the future development of these parcels. Areas along W. Century Boulevard and Airport Boulevard would be developed consistent with commercial uses by providing services to meet the needs of Airport passengers and visitors, as well as guests of the nearby hotels on W. Century Boulevard. The portion of the Belford area south of W. 96th Street and the area between W. 96th Street and W. Arbor Vitae Street would be available to provide airport-related support uses or commercial development. For purposes of this EIR, assumptions regarding the size and type of potential future related development are shown in Table 2-16 in Chapter 2, *Description of the Proposed Project*. Other possible amenities could include: theaters, health and fitness centers, layover facilities, galleries or museums, or community uses.

When individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary, to determine potential impacts related to land use. This would include a review for consistency with applicable land use plans, including the ALUP, RTP/SCS, General Plan, and Westchester-Playa-del Rey Community Plan. Additionally, developers of all potential future related development would be required to comply with all Los Angeles Municipal Code requirements for allowable uses and development standards. The potential future related development would also comply with FAA height restrictions and would not interfere with Airport operations.

As part of the proposed amendments discussed in Section 4.8.5.1 above, the parcels identified for potential future related development would be given a new subarea classification under the LAX Plan and LAX Specific Plan of Airport Landside Support Subarea (see also Section 2.7, *Potential Future Related Development*, of Chapter 2, *Description of the Proposed Project.)* These areas that would be classified as Airport Landside Support Subarea include parcels that are currently within the LAX Plan boundaries in Airport Landside Subarea and the Belford Special Study area, and parcels within the Westchester-Playa del Rey Community Plan boundaries that are zoned C2, R3, and M2. The new subarea classification of Airport Landside Support Subarea would permit uses consistent with the City's C2 Commercial Zone and allow use for construction laydown and staging, which is how these parcels would be utilized in Phase 1, Existing uses located on the parcels identified for potential future related development would be demolished (see Section 2.5, *Enabling*

Projects, in Chapter 2, *Description of the Proposed Project*) during Phase 1 and used for construction laydown and staging or the temporary relocation of facilities during construction. After construction is completed in these areas, any new uses would be required to comply with land use plan and zoning requirements as amended by the proposed Project; this would include uses that are consistent with the Airport Landside Support Subarea designation.

Based on the above, the potential future related development would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be less than significant.

4.8.6 CUMULATIVE IMPACTS

As discussed in Section 4.8.5, the proposed Project would be consistent and not conflict with applicable land use plans, policies, and regulations. Therefore, proposed Project impacts related to conflicts with applicable land use plans, policies, or regulations would be less than significant.

As shown in Table 3-1 and Table 3-2 of Chapter 3, *Overview of Project Setting,* there are other ongoing and planned Airport and non-airport projects within the immediate vicinity of the proposed Project. These projects represent further improvement in the Airport operations and further development of the surrounding area. However, these projects would not create fundamental conflicts with applicable land use plans, policies, and regulations.

On-airport projects include improvements to runways, new and improved terminals, new concourses, and development of the Northside area. LAWA reviews all on-Airport projects against the LAX Plan and the LAX Specific Plan. In addition, LAWA would oversee the future development of the Northside area in accordance with the LAX Northside Design Guidelines and Standards. The non-LAWA projects include Metro's Crenshaw/LAX Transit Corridor and Stations and improvements to the Hyperion Treatment Plant connector. These infrastructure projects would be designed to be consistent with applicable land use plans, policies, and regulations, although in certain instances, amendments to the various plans may be proposed to ensure consistency. Therefore, the proposed Project, in combination with the ongoing and future projects at LAX and the vicinity of the Airport would result in a less than significant cumulative impact related to land use and planning because there would be no cumulative conflicts with applicable land use plans, policies, and regulations.

4.8.7 MITIGATION MEASURES

As indicated in Section 4.8.5, impacts related to land use and planning would be less than significant; therefore, no mitigation measures are required.

4.8.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts related to land use and planning from implementation of the proposed Project would be less than significant.

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4.9 Noise

4.9.1 INTRODUCTION

This section addresses operational and construction noise associated with the proposed Project, including road traffic noise, construction traffic and equipment noise and vibration , and transit noise and vibration. The proposed Project addresses ground access improvements; as the proposed Project would not cause any changes to aircraft operations; departures and arrivals runway utilization; or runway configuration, noise from aircraft operations would not be affected by the proposed Project and is not addressed in this section. (See Chapter 2, *Description of the Proposed Project*.)

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 noise. For one of these screening thresholds, the Initial Study found that the proposed Project would result in "no impact" because the proposed Project is not located within the vicinity of a private airstrip; thus, no further analysis of this topic in an EIR was required. The following Initial Study screening criterion related to noise does not require any additional analysis in this EIR:

- For a project located within the vicinity of a private airstrip, the potential for the project to expose people residing or working in the project area to excessive noise levels.

4.9.1.1 Noise Descriptors

Noise levels are measured using a variety of scientific metrics. As a result of extensive research into the characteristics of noise and human response to that noise, standard noise descriptors have been developed for noise exposure analyses. The descriptors used in this noise analysis are described below. All noise levels provided in this analysis are for outdoor conditions, unless otherwise stated specifically to be interior noise levels. Detailed technical data utilized to develop the analysis presented below is contained in **Appendix M**.

A-Weighted Sound Pressure Level (dBA): The decibel (dB) is a unit used to describe sound pressure level. When expressed in dBA, the sound has been filtered to reduce the effect of very low and very high frequency sounds, much as the human ear filters sound frequencies. Without this filtering, calculated and measured sound levels would include events that the human ear cannot hear (e.g., dog whistles and low-frequency sounds, such as the groaning sounds emanating from large buildings with changes in temperature and wind). With A-weighting, calculations and sound-monitoring equipment approximate the sensitivity of the human ear to sounds of different frequencies.

Some common sounds on the dBA scale are listed in **Table 4.9.1-1**. As shown, the relative perceived loudness of a sound doubles for each increase of 10 dBA, and a 10 dBA change in the sound level corresponds to a factor of 10 increase or decrease in relative sound energy. In general, humans find a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as a doubling or halving of sound level.[1] Because of the logarithmic scale of the decibel unit, sound levels generally cannot be added or subtracted arithmetically. Two sounds of equal physical intensity will result in the sound level increasing by 3 dB, regardless of the initial sound level. For example, 60 dB plus 60 dB equals 63 dB, 80 dB plus 80 dB equals 83 dB. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70 dB ambient noise levels are combined with a 60 dB noise source the resulting noise level equals 70.4 dB.

Table 4.9.1-1: Common Sounds on the A-Weighted Decibel Scale

SOUND	SOUND LEVEL (DBA)	SUBJECTIVE LOUDNESS (PERCEIVED)	TIMES LOUDER THAN 10 DB
Rock music with amplifier	120	64	100,000,000,000
Thunder; snowmobile (operator)	110	32	10,000,000,000
Boiler shop; power mower	100	16	1,000,000,000
Orchestral crescendo at 25 feet; noisy kitchen	90	8	100,000,000
Busy street	80	4	10,000,000
Interior of department store	70	2	1,000,000
Ordinary conversation 3 feet away	60	1	100,000
Quiet automobiles at low speed	50	1/2	10,000
Average office	40	1/4	1,000
City residence	30	1/8	100
Quiet country residence	20	1/16	10
Rustle of leaves	10	1/32	1
Threshold of hearing	0	1/64	0.1

SOURCE: U.S. Department of Housing and Urban Development, *Aircraft Noise Impact – Planning Guidelines for Local Agencies*, 1972; California Department of Transportation, Division of Environmental Analysis, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

1 Cowan P., James, *Handbook of Environmental Acoustics*, p. 34, 1994.

Maximum Noise Level (L_{max}): L_{max} is the maximum or peak sound level during a noise event. The metric accounts only for the instantaneous peak intensity of the sound, and not for the duration of the event. As a vehicle passes by an observer, the sound level increases to a maximum level and then decreases. Some sound level meters measure and record the maximum or L_{max} level.

Sound Exposure Level (SEL): SEL, expressed in dBA, is a time-integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of 1 second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The standardization of discrete noise events into a 1-second duration allows calculation of the cumulative noise exposure of a series of noise events that occur over a period of time.

Equivalent Continuous Noise Level (L_{eq}): L_{eq} is the sound level, expressed in dBA, of a steady sound that has the same A-weighted sound energy as the time-varying sound over the averaging period. Unlike SEL, L_{eq} is the average sound level for a specified time period (e.g., 24 hours, 8 hours, 1 hour, etc.). L_{eq} is calculated by integrating the sound energy from all noise events over a given time period and applying a factor for the number of events. L_{eq} can be expressed for any time interval; for example, the L_{eq} representing an averaged level over an 8-hour period would be expressed as $L_{eq(8)}$.

Day-Night Average Sound Level (DNL): DNL, formerly referred to as L_{dn}, is expressed in dBA and represents the noise level over a 24-hour period. Because environmental noise fluctuates over time, DNL was devised to relate noise exposure over time to human response. DNL is a 24-hour average of the hourly L_{eq}, but with penalties to account for the increased sensitivity to noise events that occur during the more sensitive nighttime periods. Specifically, DNL penalizes noise 10 dB during the nighttime time period (10:00 p.m. to 7:00 a.m.). The U.S. Environmental Protection Agency (USEPA) introduced the metric in 1976 as a single-number measurement of community noise exposure. The FAA adopted DNL as the noise metric for measuring cumulative aircraft noise under Federal Aviation Regulations (FAR) Part 150, Airport Noise Compatibility Planning. The Department of Housing and Urban Development, the Veterans Administration, the Department of Defense, the United States Coast Guard, and the Federal Transit Administration have also adopted DNL for measuring cumulative noise exposure. DNL is used to describe existing and predicted noise exposure in communities in airport environs based on the average daily operations during the year and the average annual operational conditions at an airport. Therefore, at a specific location, the noise exposure on a particular day is likely to be higher or lower than the annual average noise exposure, depending on the specific traffic levels on that day.

Community Noise Equivalent Level (CNEL): CNEL, expressed in dBA, is the standard metric used in California to represent cumulative noise exposure. The metric provides a single-number description of the sound energy to which a person or community is exposed over a period of 24 hours similar to DNL. CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). When a noise event occurs in the evening, a penalty of 4.77 dBA is added to the nominal sound level (equivalent to a threefold increase in aircraft operations). A 10 dBA penalty is added to nighttime noise events (equivalent to a tenfold increase in aircraft operations). The evening weighting is the only difference between CNEL and DNL.

4.9.1.2 Effects of Noise on Humans

Human response to sound is highly individualized. Annoyance is the most common issue associated with community noise levels. Many factors influence the response to noise including the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as individual opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence the response to noise. These factors result in the reaction to noise being highly subjective, with the perceived effect of a particular noise varying widely among individuals in a community.

The effects of noise can be grouped into three general categories[2]:

- Subjective effects of annoyance, nuisance, dissatisfaction;
- Interference with activities such as speech, sleep, and learning; and
- Physiological effects such as starting hearing loss.

Noise-induced hearing loss usually takes years to develop.[3] Hearing loss is one of the most obvious and easily quantifiable effects of excessive exposure to noise. While the loss may be temporary at first, it can become permanent after continued exposure. When combined with hearing loss associated with aging, the amount of hearing loss directly due to the environment is difficult to quantify. Although the major cause of noise-induced hearing loss is occupational, non-occupational sources may also be a factor.

Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. Interference with communication has proved to be one of the most important components of noise-related annoyance.

Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term effects, with the possibility of more serious effects on health if it continues over long periods.

Annoyance can be defined as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above.

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2 U.S. Environmental Protection Agency, Office of Noise Abatement and Control, *Annoyance, Loudness, and Measurement of Repetitive Type Impulsive Noise Sources,* pg. 3-1, November 1979.

3 World Health Organization, *Children and Noise, Children's Health and the Environment,* December 2009.

4.9.2 ROAD TRAFFIC NOISE

4.9.2.1 Introduction

This section addresses noise impacts associated with changes in roadway traffic attributable to the LAX Landside Access Modernization Program. Specifically, this section describes the extent to which ambient exterior noise levels at noise-sensitive uses located along major roadways around LAX, as well as on a larger regional scale, may change due to traffic associated with the proposed Project. Road traffic noise was examined within the Project area and along streets that may experience increased vehicular traffic as a result of the reconfiguration of localized traffic circulation following Project implementation.

Noise can be defined as unwanted sound. Traffic noise (or any noise) can disrupt normal activities when the noise reaches certain levels, or when noises are distinctly louder than the typical ambient noise environment. Sound from highway traffic is primarily generated from tire-pavement interaction, vehicle exhaust, and engines. Additionally, vehicle horns and wind shear play a small role in noise from highway traffic. Vehicle traffic sounds are generally considered to be unwanted, or noise, to most people. Table 4.9.1-1 lists common sound levels on the A-weighted decibel (dBA) scale, including the typical sound level on a busy street (80 dBA) or from a quiet automobile at a low speed (50 dBA).

Highway/roadway traffic noise is never constant. The noise level is always changing based on the number, speed, and type of the vehicles producing the noise as well as the driving habits of the vehicle operators. Generally, the loudness of traffic noise increases with heavier traffic volumes, higher speeds, or greater numbers of trucks. Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The loudness of traffic noise can also be increased by defective mufflers or other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines will also increase traffic noise levels. Other, more complicated factors also affect the loudness of traffic noise. For example, as a person moves away from a highway, traffic noise levels are reduced by distance, terrain, and vegetation, as well as by natural and man-made obstacles.

4.9.2.2 Methodology

The road traffic noise impacts analysis completed for the proposed Project included the following steps:

- Identify noise-sensitive receptor locations that could be affected by Project-related changes in traffic conditions;
- Calculate road traffic noise levels at noise-sensitive receptors for baseline conditions (2015) and for future cumulative conditions with and without implementation of the proposed Project; and
- Assess the Project-related change in noise levels at the receptor locations compared to both existing and cumulative future without-Project conditions, and determine whether the change would result in a significant impact.

Appendix M describes the noise impact analysis methodology in detail. For purposes of this analysis, the year for existing conditions roadway traffic volumes is 2015, which is the year that the Notice of Preparation for this EIR was published and is also the baseline year for the off-airport transportation impact analysis (see Section

4.12.2, *Off-Airport Transportation*). Methodologies for road traffic noise analyses for both the Project area and the Traffic Study Area are discussed below.

Project Area

The Project area includes roadway segments west of the I-405 and east of the Airport between Westchester Parkway/W. Arbor Vitae Street and Imperial Highway. Traffic volume data for existing baseline (Year 2015), future (2024 and 2035) conditions, which would include cumulative traffic, were reviewed to identify roadways most likely to experience increased traffic due to the proposed Project. This was accomplished through the off-airport traffic modeling discussed in Section 4.12.2, *Off-Airport Transportation*, which analyzed the percent increase in traffic on each roadway segment in the model study area during the modeled peak hours.

In conjunction with the evaluation of the traffic data, a review of existing land uses was performed to determine the nature and location of noise-sensitive uses located along roadways projected to experience higher percentages of traffic volume increases than most other roads nearby. Noise-sensitive uses are places that might contain noise-sensitive equipment; individuals who are particularly susceptible to noise stimuli, such as children or the elderly; or accommodations for people to sleep. The noise-sensitive land uses include residences, hospitals, hotels, and schools, among others. Noise-sensitive receptors close to proposed Project components were identified in a land use survey to identify locations where ambient noise measurements could be recorded to forecast increases in noise levels from operational traffic.

The Federal Highway Administration's (FHWA) Traffic Noise Model version 2.5 (TNM) traffic noise prediction and analysis software was used to estimate highway traffic noise within the Project area. The TNM program performs the noise level predictions by constructing a three-dimensional terrain model encompassing the location of the noise sources and the receptors, and calculates estimated noise levels at the receptor location based on vehicle volume, speed, fleet mix, distance to receiver, and area terrain. Traffic turning movement counts were used to calculate estimates of average daily traffic (ADT) volumes on the roadway segments between traffic study intersections. For purposes of this analysis, the timeframes with the highest ADT counts were used. Based on the traffic counts, the PM peak hour (3:00 a.m. – 7:00 p.m.) had the highest ADT volumes. These traffic counts, along with roadway parameters, were incorporated into the SoundPLAN noise contour visualization software; ADT volumes and road parameter data was exported from SoundPLAN to TNM. The peak-hour L_{eq} noise levels were predicted using the TNM program and then converted to 24-hour CNEL values using Caltrans methodologies.[4] Future traffic volume estimates were used in conjunction with SoundPLAN and TNM to predict future road traffic noise for these locations with and without the proposed Project.

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4 California Department of Transportation, Division of Environmental Analysis, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

Traffic Study Area

As discussed in Section 4.12.2, *Off-Airport Transportation*, 183 intersections in the vicinity of LAX were analyzed for traffic impacts. These intersections, as well as the extent of the Traffic Study Area, are shown in Appendix O. Of the 183 intersections, 10 intersections were identified as geographically representative of regional locations that may experience increased traffic volumes attributable to the proposed Project. These intersections are shown on **Figure 4.9.2-1**. Field measurements at these locations were collected between July 28, 2015, and August 4, 2015. The locations are described by the nearest approximate intersection, as shown in **Table 4.9.2-1**.

In addition to field measurements, refined noise modeling was conducted for roadway segments in the Project area to estimate existing noise levels. Traffic turning movement counts were used to calculate estimates of ADT volumes on the roadway segments between traffic study intersections. The ADT volumes at the representative intersections were used to estimate existing noise levels generated by traffic along the roadway segments connecting the intersections.

Table 4.9.2-1: Traffic Study Area Existing Ambient Noise Receptors

RECEPTOR ID	INTERSECTION	LOCATION DESCRIPTION
RT1	Centinela Avenue & Culver Boulevard	Northern Corner of Intersection adjacent to grass walkway
RT2	Sepulveda Boulevard & Slauson Avenue	Northeast Corner adjacent to Chase Bank
RT3	Lincoln Boulevard & Jefferson Boulevard	Southeast Corner of Intersection
RT4	Sepulveda Boulevard & Manchester Avenue	Northeast Corner in front of Medical Imaging Building
RT5	Inglewood Avenue & Manchester Avenue	Southeast Corner outside Carl's Jr.
RT6	La Brea Avenue & Century Boulevard	Northeast Corner on East Side of La Brea Avenue adjacent to CVS
RT7	Sepulveda Boulevard & Imperial Highway	Southeast Corner outside Boeing Parking Lot
RT8	Prairie Avenue & Imperial Highway	Southeast Corner outside Mobil Gas Station
RT9	Hawthorne Boulevard & 120th Street	Northwest Corner outside Walgreens Building
RT10	Aviation Boulevard & El Segundo Boulevard	Northeast Corner outside Parsons Building

SOURCE: Appendix M of this EIR.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

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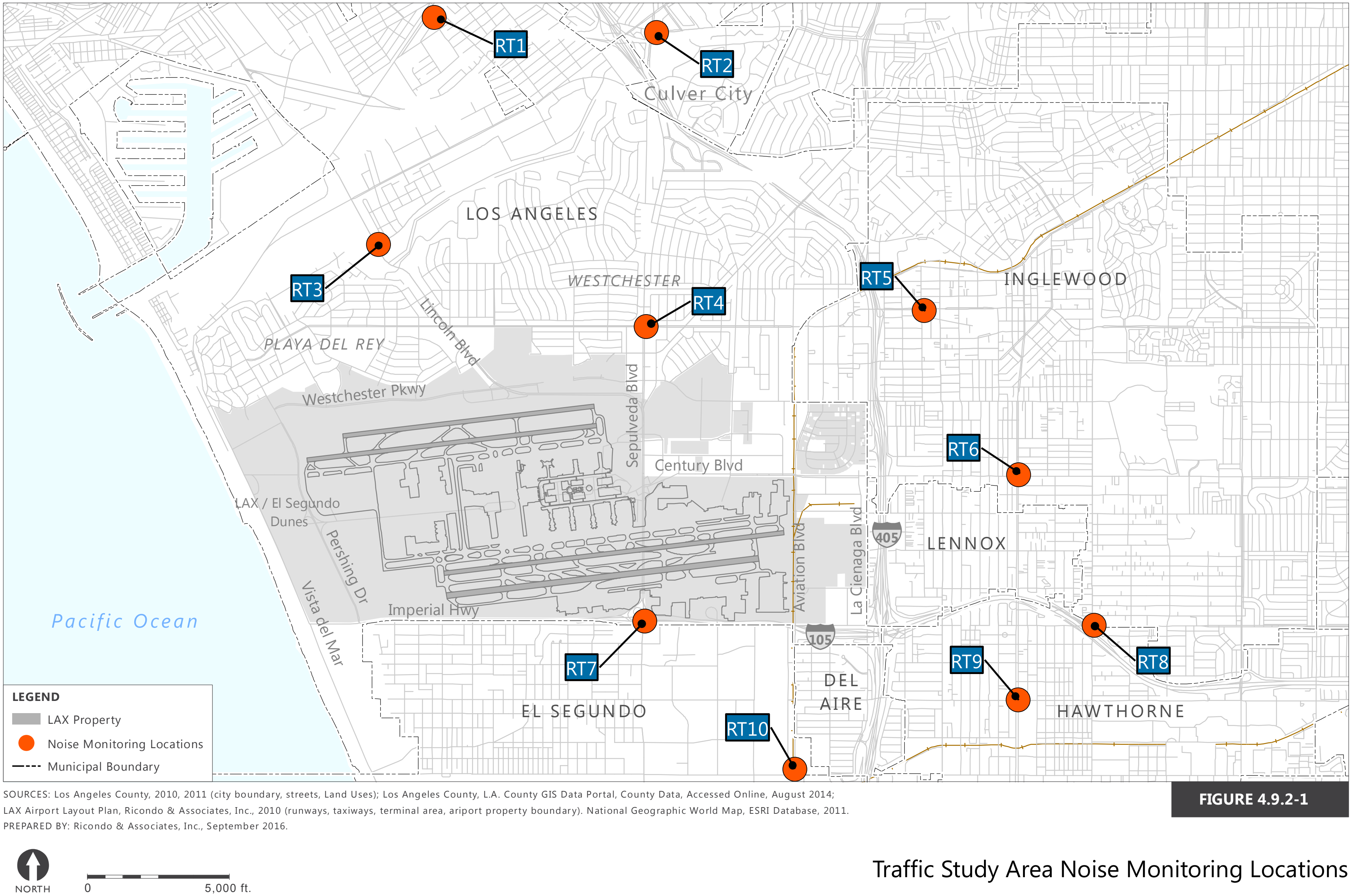

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets, Land Uses); Los Angeles County, L.A. County GIS Data Portal, County Data, Accessed Online, August 2014; LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.9.2-1

Traffic Study Area Noise Monitoring Locations

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4.9.2.3 Existing Conditions

Modeled Traffic Study Area

Existing road traffic noise levels were calculated for road segments with ADT counts from the traffic impact analysis. Modeled locations of the Traffic Study Area are shown on **Figure 4.9.2-2**. The Traffic Study Area includes roadway segments west of the I-405 and east of the Airport between Westchester Parkway/W. Arbor Vitae Street and Imperial Highway.

Results of the Traffic Study Area road traffic noise modeling used to estimate existing noise levels are presented in **Table 4.9.2-2**. The modeled road traffic CNEL values in the Traffic Study Area ranged from a high of 76.5 dBA on Sepulveda Boulevard, north of the I-105 Westbound Ramps (Study Intersection 66) to a low of 43.3 dBA on 111th Street, west of La Cienega Boulevard (Study Intersection 123).

Although differences between measured and modeled noise levels can occur, the relative variance between the two would remain consistent over a series of modeled scenarios (i.e., the difference between measured baseline noise and measured future noise conditions would be the same as the difference between modeled baseline noise and modeled future noise conditions). Using road traffic noise values from the TNM program as the basis to measure the predicted future increase in road traffic noise levels is considered more conservative than using the measured ambient exterior noise levels because the TNM value is typically lower than the measured ambient noise level (i.e., TNM values focus on road traffic noise, while measured ambient noise includes multiple sources, including aircraft noise associated with operations at LAX) and, moreover, provides a more direct reflection of changes in noise levels that are attributable to Project-related changes in traffic conditions.

Traffic Study Area

As explained in Section 4.9.2.2, ten (10) intersections within the larger Traffic Study Area were selected to assess noise conditions beyond the Project site (see Figure 4.9.2-2). Results of the existing ambient noise levels over a 20-minute period of the Traffic Study Area are presented in **Table 4.9.2-3.** The 20-minute Leq values ranged from a high of 76.2 dB(A) at the intersection of Prairie Avenue and Imperial Highway to a low of 69.7 dB(A) at the intersection of Hawthorne Boulevard and 120th Street. The primary source of existing noise levels at these locations is road traffic.

4.9.2.4 Thresholds of Significance

A significant road traffic noise impact would occur if the proposed Project would result in the following condition:

- Roadway traffic from the proposed Project causes the ambient noise level measured at the property line of affected uses to increase by 3 dB(A) CNEL if post-Project noise levels are within the "normally unacceptable" or "clearly unacceptable" compatibility category.

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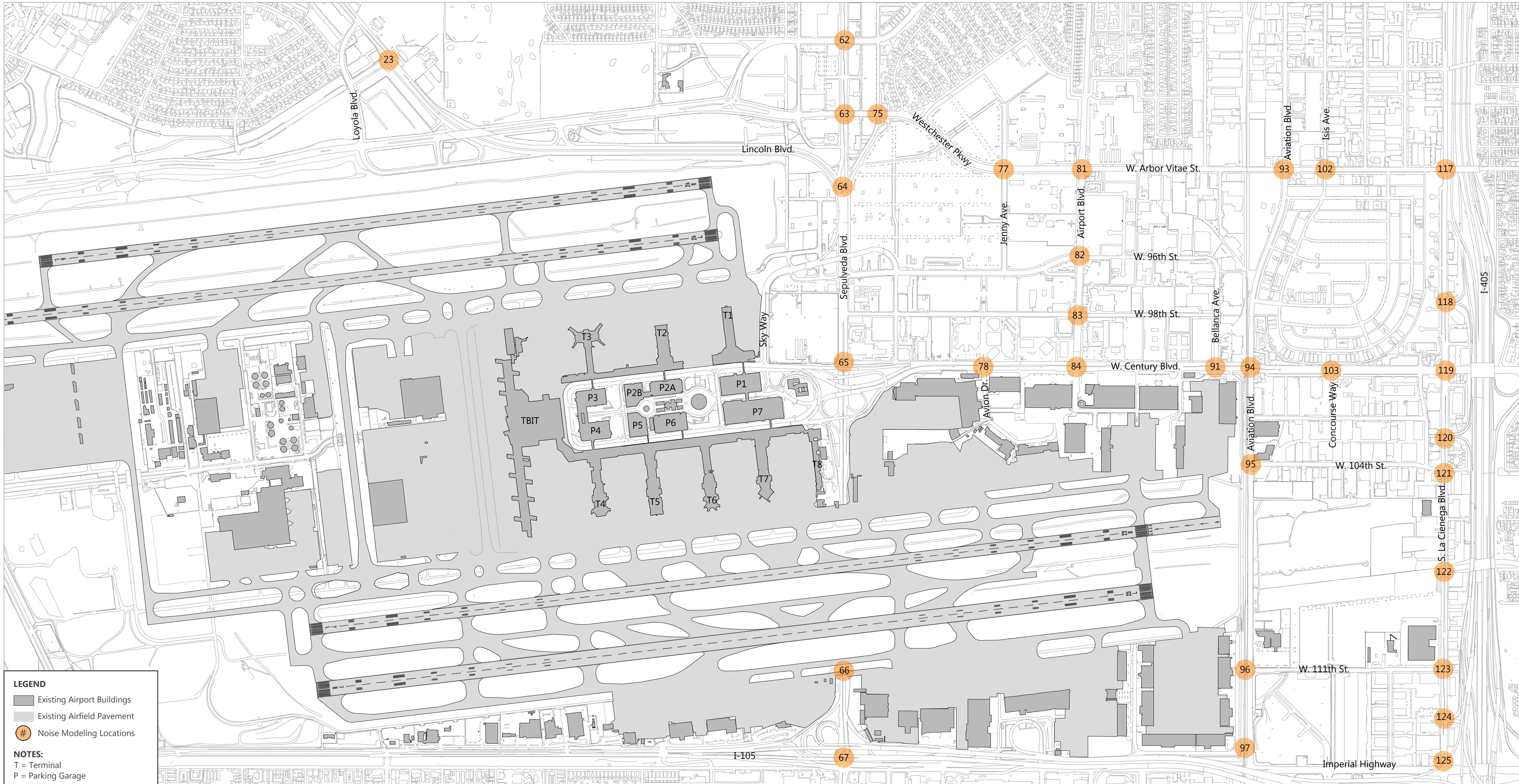

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; Meridian Consultants, July 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.9.2-2

NORTH 0 1,300 ft.

Traffic Study Area Noise Modeling Locations

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Table 4.9.2-2 (1 of 2): Modeled Traffic Study Area Existing Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	MAXIMUM AVERAGE DAILY TRIPS	EXISTING CNEL (DBA)
	Sepulveda Boulevard		
62	South of La Tijera Boulevard	32,448	65.3
63	North of Westchester Parkway	35,767	65.6
63	South of Westchester Parkway	36,942	68.4
64	North of Lincoln Boulevard	31,478	66.6
64	South of Lincoln Boulevard	31,179	69.0
65	North of Century Boulevard	63,049	75.5
65	South of Century Boulevard	64,904	75.5
66	North of I-105 Westbound Ramps	81,604	76.5
66	South of I-105 Westbound Ramps	55,282	74.8
67	North of Imperial Highway	54,555	74.8
	Westchester Parkway		
63	East of Sepulveda Boulevard	12,158	57.1
75	West of Sepulveda Eastway	13,156	57.6
75	East of Sepulveda Eastway	16,289	66.2
77	West of Jenny Avenue	13,184	61.3
77	East of Jenny Avenue	15,021	61.9
81	West of Airport Boulevard	15,385	61.8
	Arbor Vitae Street		
81	East of Airport Boulevard	16,233	55.9
93	West of Aviation Boulevard	17,165	60.6
93	East of Aviation Boulevard	14,797	64.3
102	West of Isis Avenue	14,676	64.4
102	East of Isis Avenue	14,434	63.4
117	West of La Cienega Boulevard	13,287	63.8
	Airport Boulevard		
81	South of Westchester Parkway	20,196	63.1
82	North of 96th Street	18,648	65.6
82	South of 96th Street	17,110	65.2
83	North of 98th Street	18,033	65.4
83	South of 98th Street	16,420	56.2
84	North of Century Boulevard	16,485	64.0
	Aviation Boulevard		
93	South of Arbor Vitae Street	15,524	60.0
94	North of Century Boulevard	13,371	68.6
94	South of Century Boulevard	18,909	66.7
95	North of 104th Street	19,524	66.8
95	South of 104th Street	21,296	67.2
96	North of 111th Street	21,482	59.5
96	South of 111th Street	20,793	59.4

Table 4.9.2-2 (2 of 2): Modeled Traffic Study Area Existing Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	MAXIMUM AVERAGE DAILY TRIPS	EXISTING CNEL (DBA)
97	North of Imperial Highway	20,718	59.4
	La Cienega Boulevard		
117	South of Arbor Vitae Street	16,615	62.2
118	North of I-405 Southbound Ramps	16,270	62.2
118	South of I-405 Southbound Ramps	19,133	66.9
119	North of Century Boulevard	21,082	59.5
119	South of Century Boulevard	21,082	57.0
120	North of I-405 Southbound Ramps	22,573	57.3
120	South of I-405 Southbound Ramps	16,317	55.9
121	North of 104th Street	16,186	55.9
121	South of 104th Street	17,296	56.3
122	North of Lennox Boulevard	16,960	56.1
122	South of Lennox Boulevard	21,296	56.2
123	North of 111th Street	21,482	56.2
123	South of 111th Street	18,070	58.9
124	North of I-405 Southbound Ramps	17,203	58.6
124	South of I-405 Southbound Ramps	18,070	58.9
125	North of Imperial Highway	14,620	65.7
	Century Boulevard		
78	East of Avion Drive	24,988	67.8
84	West of Airport Boulevard	30,620	68.6
84	East of Airport Boulevard	32,448	68.7
91	West of Bellanca Avenue	31,506	68.5
91	East of Bellanca Avenue	35,897	69.1
94	West of Aviation Boulevard	38,406	68.8
94	East of Aviation Boulevard	32,401	66.9
103	West of Concourse Way	27,273	68.3
103	East of Concourse Way	27,273	68.3
119	West of La Cienega Boulevard	26,340	60.6
	Lincoln Boulevard		
23	South of La Tijera Boulevard	31,823	71.5
64	North of Sepulveda Boulevard	19,972	66.6
	111th Street		
96	East of Aviation Boulevard	2,191	53.4
123	West of La Cienega Boulevard	522	43.3
	104th Street		
95	East of Aviation Boulevard	1,911	49.0
121	West of La Cienega Boulevard	4,056	52.2

SOURCE: Appendix M of this EIR.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Table 4.9.2-3: Traffic Study Area Existing Ambient Noise Levels

RECEPTOR ID	INTERSECTION	DURATION	LEQ (20-MINUTE)
RT1	Centinela Avenue & Culver Boulevard	20 minutes	73.1
RT2	Sepulveda Boulevard & Slauson Avenue	20 minutes	72.9
RT3	Lincoln Boulevard & Jefferson Boulevard	20 minutes	72.5
RT4	Sepulveda Boulevard & Manchester Avenue	20 minutes	72.2
RT5	Inglewood Avenue & Manchester Avenue	20 minutes	73.2
RT6	La Brea Avenue & Century Boulevard	20 minutes	72.0
RT7	Sepulveda Boulevard & Imperial Highway	20 minutes	74.9
RT8	Prairie Avenue & Imperial Highway	20 minutes	76.2
RT9	Hawthorne Boulevard & 120th Street	20 minutes	69.7
RT10	Aviation Boulevard & El Segundo Boulevard	20 minutes	74.7

SOURCE: Appendix M of this EIR.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

The above threshold is derived from the *L.A. CEQA Thresholds Guide*[5] relative to operational noise impacts, including road traffic noise, associated with a proposed project.

4.9.2.5 Impact Analysis

LAX Landside Access Modernization Program Project

Existing (2015) with Project

For informational purposes, **Table 4.9.2-4** presents the predicted road traffic noise level change, in terms of CNEL, from baseline (2015) conditions with the assumptions that the proposed Project is operational, and also shows the associated change in CNEL as compared to baseline (2015) conditions without the proposed Project.

As shown in Table 4.9.2-4, CNEL increases (or decreases) as a result of the Project ranged from a low of -2.2 dB(A) along 104th Street east of Aviation Boulevard (Study Intersection 95) to a high of 5.4 dB(A) along 111th Street east of Aviation Boulevard (Study Intersection 96). Under this theoretical scenario, the proposed Project would cause an increase in noise of 5 dB(A) CNEL at this intersection. However, the roadway noise along 111th Street east of Aviation Boulevard would be 58.8 dB(A) CNEL and would fall within the acceptable community noise exposure for industrial, manufacturing, and utilities and land uses.

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5 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

[Draft]

Table 4.9.2-4 (1 of 2): 2015 With and Without Project Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2015 WITHOUT PROJECT (CNEL)	2015 WITH PROJECT (CNEL)	COMPARISON OF 2015 WITH PROJECT TO 2015 WITHOUT PROJECT CONDITIONS (CNEL)
	Sepulveda Boulevard			
62	South of La Tijera Boulevard	65.3	64.9	-0.4
63	North of Westchester Parkway	65.6	65.6	0.0
63	South of Westchester Parkway	68.4	67.9	1.5
64	North of Lincoln Boulevard	66.6	66.8	0.2
64	South of Lincoln Boulevard	69.0	71.0	2.0
65	North of Century Boulevard	75.5	75.3	-0.2
65	South of Century Boulevard	75.5	75.0	-0.5
66	North of I-105 Westbound Ramps	76.5	76.3	-0.2
66	South of I-105 Westbound Ramps	74.8	73.9	-0.9
67	North of Imperial Highway	74.8	74.7	-0.1
	Westchester Parkway			
63	East of Sepulveda Boulevard	57.1	57.2	0.1
75	West of Sepulveda Eastway	57.6	57.7	0.1
75	East of Sepulveda Eastway	66.2	66.3	0.1
77	West of Jenny Avenue	61.3	62.8	1.5
77	East of Jenny Avenue	61.9	63.0	1.1
81	West of Airport Boulevard	61.8	62.9	1.1
	Arbor Vitae Street			
81	East of Airport Boulevard	55.9	56.0	0.1
93	West of Aviation Boulevard	60.6	60.5	-0.1
93	East of Aviation Boulevard	64.3	63.9	-0.4
102	West of Isis Avenue	64.4	64.5	0.1
102	East of Isis Avenue	63.4	63.2	-0.2
117	West of La Cienega Boulevard	63.8	64.6	0.8
	Airport Boulevard			
81	South of Westchester Parkway	63.1	62.3	-0.8
82	North of 96th Street	65.6	65.0	-0.6
82	South of 96th Street	65.2	64.4	-0.8
83	North of 98th Street	65.4	65.1	-0.3
83	South of 98th Street	56.2	55.1	-0.9
84	North of Century Boulevard	64.0	63.2	-0.8
	Aviation Boulevard			
93	South of Arbor Vitae Street	60.0	61.6	1.6
94	North of Century Boulevard	68.6	70.4	1.8
94	South of Century Boulevard	66.7	66.9	0.2
95	North of 104th Street	66.8	67.5	0.7
95	South of 104th Street	67.2	67.6	0.4
96	North of 111th Street	59.5	60.2	0.7
96	South of 111th Street	59.4	58.4	-1.0

Table 4.9.2-4 (2 of 2): 2015 With and Without Project Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2015 WITHOUT PROJECT (CNEL)	2015 WITH PROJECT (CNEL)	COMPARISON OF 2015 WITH PROJECT TO 2015 WITHOUT PROJECT CONDITIONS (CNEL)
97	North of Imperial Highway	59.4	58.8	-0.6
	La Cienega Boulevard			
117	South of Arbor Vitae Street	62.2	61.6	-1.0
118	North of I-405 Southbound Ramps	62.2	62.3	0.1
118	South of I-405 SB Ramps	66.9	66.9	0.0
119	North of Century Boulevard	59.5	59.3	-0.2
119	South of Century Boulevard	57.0	56.6	-0.4
120	North of I-405 Southbound Ramps	57.3	57.4	0.1
120	South of I-405 Southbound Ramps	55.9	55.8	-0.1
121	North of 104th Street	55.9	56.2	0.3
121	South of 104th Street	56.3	56.0	-0.3
122	North of Lennox Boulevard	56.1	56.2	0.1
122	South of Lennox Boulevard	56.2	56.0	-0.2
123	North of 111th Street	56.2	56.3	0.1
123	South of 111th Street	58.9	58.2	-0.7
124	North of I-405 Southbound Ramps	58.6	58.7	0.1
124	South of I-405 Southbound Ramps	58.9	58.4	-0.5
125	North of Imperial Highway	65.7	65.6	-0.1
	Century Boulevard			
78	East of Avion Drive	67.8	66.0	-1.8
84	West of Airport Boulevard	68.6	67.3	-1.3
84	East of Airport Boulevard	68.7	66.8	-1.9
91	West of Bellanca Avenue	68.5	67.9	-0.6
91	East of Bellanca Avenue	69.1	68.3	-0.8
94	West of Aviation Boulevard	68.8	67.8	-1.0
94	East of Aviation Boulevard	66.9	65.9	-1.0
103	West of Concourse Way	68.3	67.2	-1.1
103	East of Concourse Way	68.3	68.6	0.3
119	West of La Cienega Boulevard	60.6	60.7	0.1
	Lincoln Boulevard			
23	South of La Tijera Boulevard	71.5	71.3	-0.2
64	North of Sepulveda Boulevard	66.6	66.8	0.2
	111th Street			
96	East of Aviation Boulevard	53.4	58.8	5.4
123	West of La Cienega Boulevard	43.3	50.9	1.6
	104th Street			
95	East of Aviation Boulevard	49.0	46.8	-2.2
121	West of La Cienega Boulevard	52.2	51.6	-0.6

SOURCE: Meridian Consultants, 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Other changes in CNEL include a 1.8 dB(A) increase along Aviation Boulevard north of Century Boulevard (Study Intersection 94) and a 1.6 dB(A) increase along 111th Street West of La Cienega Boulevard (Study Intersection 123); the noise increase at these intersections would not exceed the 3 dB(A) CNEL threshold regardless of the compatibility classification of adjacent land use; therefore, road traffic noise impacts would be less than significant.

Traffic Study Area

Table 4.9.2-5 presents the predicted road traffic noise levels, for each of the 10 intersections within the larger Traffic Study Area with the assumptions that the proposed Project is operational, and also shows the associated change in noise as compared to the baseline (2015) conditions without the proposed Project.

Table 4.9.2-5: Traffic Study Area Change in Existing Roadway Noise Levels

RECEPTOR ID	INTERSECTION	EXISTING (MEASURED)	PROJECT	EXISTING PLUS PROJECT	CALCULATED INCREASE IN NOISE (DB)
RT1	Centinela Avenue & Culver Boulevard	73.1	65.8	73.8	0.7
RT2	Sepulveda Boulevard & Slauson Avenue	72.5	65.0	73.2	0.7
RT3	Lincoln Boulevard & Jefferson Boulevard	72.9	64.6	73.5	0.6
RT4	Sepulveda Boulevard & Manchester Avenue	72.2	65.0	73.0	0.8
RT5	Inglewood Avenue & Manchester Avenue	72.0	60.0	72.3	0.3
RT6	La Brea Avenue & Century Boulevard	73.2	57.4	73.3	0.1
RT7	Sepulveda Boulevard & Imperial Highway	74.9	74.7	77.8	2.9
RT8	Prairie Avenue & Imperial Highway	74.7	67.0	75.4	0.7
RT9	Hawthorne Boulevard & 120th Street	69.7	64.7	70.9	0.8
RT10	Aviation Boulevard & El Segundo Boulevard	76.2	69.2	77.0	0.8

SOURCE: Meridian Consultants, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

As shown in Table 4.9.2-5, noise increase as a result of the Project ranged from a low of 0.1 dB at La Brea Avenue and Century Boulevard to a high of 2.9 dB at Sepulveda Boulevard and Imperial Highway. The noise increase at these locations would not exceed the 3 dB(A) CNEL threshold regardless of the compatibility classification of adjacent land uses; therefore, road traffic noise impacts would be less than significant.

LAX Landside Access Modernization Program Potential Future Related Development

After construction of the proposed Project, parcels that were needed for construction laydown and staging may be subject to potential future development. Traffic associated with approximately 900,000 square feet of commercial development was analyzed in the future (2035) condition. **Table 4.9.2-6** and **Table 4.9.2-7** presented below shows traffic noise associated with potential future related development in combination with future (2035) Project conditions, and compares it to the future (2035) without Project conditions. As described below, the changes in roadway noise would not exceed the 3 dB(A) CNEL threshold, regardless of the compatibility category of adjacent land uses; therefore, road traffic noise impacts would be less than significant.

4.9.2.6 Cumulative Impacts

Future (2024) with Project

Table 4.9.2-6 presents the predicted road traffic noise level change, in terms of CNEL, from 2024 Without Project conditions to With Project conditions for each of the modeled roadways during peak hours.

The 2024 Without Project conditions represent changes in traffic levels due to background growth and cumulative development within the Traffic Study Area, as described in Section 4.12.2 and Appendix O. As shown, CNEL increases (or decreases) as a result of the Project ranged from a low of -2.1 dB(A) along Century Boulevard east of Airport Boulevard (Study Intersection 84) to a high of 1.9 dB(A) along Aviation Boulevard north of Century Boulevard (Study Intersection 94). Other changes in CNEL include a 1.6 dB(A) increase along Arbor Vitae Street west of La Cienega Boulevard (Study Intersection 117), and a 1.7 dB(A) increase along Aviation Boulevard south of Arbor Vitae Street (Study Intersection 93).

As shown in Table 4.9.2-6, Future (2024) road traffic noise levels with Project conditions as compared to Future (2024) Without Project conditions at all modeled roadways would not exceed the 3 dB(A) CNEL threshold regardless of the compatibility classification of adjacent land use; therefore, road traffic noise impacts would be less than cumulatively considerable, and therefore less than significant.

Future (2035) with Project

Table 4.9.2-7 presents the predicted road traffic noise level change, in terms of CNEL, from 2035 Without Project conditions to With Project conditions (including potential future related development) for each of the modeled roadways during peak hours. The 2035 Without Project conditions represent traffic growth or cumulative development within the Project area.

As shown, CNEL increases (or decreases) as a result of the Project ranged from a low of -6.2 dB(A) along 104th Street east of Aviation Boulevard (Study Intersection 95) to a high of 2.3 dB(A) along Aviation Boulevard north of Century Boulevard (Study Intersection 94). Other changes in CNEL include a 1.5 dB(A) increase along Arbor Vitae Street west of La Cienega Boulevard (Study Intersection 117), and a 1.4 dB(A) increase along Westchester Parkway west of Jenny Avenue (Study Intersection 77).

[Draft]

Table 4.9.2-6 (1 of 2): Future (2024) Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2024 WITHOUT PROJECT (CNEL)	2024 WITH PROJECT (CNEL)	COMPARISON OF 2024 WITH PROJECT TO 2024 WITHOUT PROJECT CONDITIONS (CNEL)
	Sepulveda Boulevard			
62	South of La Tijera Boulevard	70.5	69.9	-0.6
63	North of Westchester Parkway	70.4	70.3	-0.1
63	South of Westchester Parkway	72.1	72.0	-0.1
64	North of Lincoln Boulevard	71.1	71.3	0.2
64	South of Lincoln Boulevard	77.5	77.6	0.1
65	North of Century Boulevard	78.6	78.2	-0.4
65	South of Century Boulevard	78.4	78.3	-0.1
66	North of I-105 Westbound Ramps	79.4	79.3	-0.1
66	South of I-105 Westbound Ramps	77.1	76.9	-0.2
67	North of Imperial Highway	77.6	77.5	-0.1
	Westchester Parkway			
63	East of Sepulveda Boulevard	60.9	60.9	0.0
75	West of Sepulveda Eastway	61.2	61.1	-0.1
75	East of Sepulveda Eastway	63.6	63.7	0.1
77	West of Jenny Avenue	63.0	64.0	1.0
77	East of Jenny Avenue	63.5	64.1	0.6
81	West of Airport Boulevard	63.6	64.1	0.5
	Arbor Vitae Street			
81	East of Airport Boulevard	64.2	64.2	0.0
93	West of Aviation Boulevard	64.4	64.1	-0.3
93	East of Aviation Boulevard	66.8	66.3	-0.5
102	West of Isis Avenue	66.7	66.4	-0.3
102	East of Isis Avenue	66.7	66.9	0.2
117	West of La Cienega Boulevard	65.9	67.5	1.6
	Airport Boulevard			
81	South of Westchester Parkway	64.9	64.3	-0.6
82	North of 96th Street	64.5	64.0	-0.5
82	South of 96th Street	63.2	64.2	1.0
83	North of 98th Street	66.9	67.7	0.8
83	South of 98th Street	61.6	61.8	0.2
84	North of Century Boulevard	64.9	65.1	0.2
	Aviation Boulevard			
93	South of Arbor Vitae Street	61.8	63.5	1.7
94	North of Century Boulevard	71.9	73.8	1.9
94	South of Century Boulevard	69.7	70.1	0.4
95	North of 104th Street	69.9	70.2	0.3
95	South of 104th Street	70.1	70.6	0.5
96	North of 111th Street	69.8	70.3	0.5
96	South of 111th Street	63.3	61.7	-1.6

Table 4.9.2-6 (2 of 2): Future (2024) Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2024 WITHOUT PROJECT (CNEL)	2024 WITH PROJECT (CNEL)	COMPARISON OF 2024 WITH PROJECT TO 2024 WITHOUT PROJECT CONDITIONS (CNEL)
97	North of Imperial Highway	63.3	61.7	-1.6
	La Cienega Boulevard			
117	South of Arbor Vitae Street	63.8	63.5	-0.3
118	North of I-405 Southbound Ramps	64.1	63.8	-0.3
118	South of I-405 SB Ramps	63.2	62.8	-0.4
119	North of Century Boulevard	63.2	62.8	-0.4
119	South of Century Boulevard	63.2	63.1	-0.1
120	North of I-405 Southbound Ramps	63.5	63.5	0.0
120	South of I-405 Southbound Ramps	62.3	62.6	0.3
121	North of 104th Street	62.3	62.6	0.3
121	South of 104th Street	62.6	62.7	0.1
122	North of Lennox Boulevard	62.5	62.7	0.2
122	South of Lennox Boulevard	62.5	62.8	0.3
123	North of 111th Street	62.5	62.8	0.3
123	South of 111th Street	62.7	62.5	-0.2
124	North of I-405 Southbound Ramps	62.8	62.6	-0.2
124	South of I-405 Southbound Ramps	62.8	62.4	-0.4
125	North of Imperial Highway	62.1	61.6	-0.5
	Century Boulevard			
78	East of Avion Drive	74.0	73.7	-0.3
84	West of Airport Boulevard	73.9	73.7	-0.2
84	East of Airport Boulevard	71.0	68.9	-2.1
91	West of Bellanca Avenue	71.0	70.7	-0.3
91	East of Bellanca Avenue	71.5	71.4	-0.1
94	West of Aviation Boulevard	71.5	70.9	-0.6
94	East of Aviation Boulevard	68.8	67.6	-1.2
103	West of Concourse Way	68.1	66.7	-1.4
103	East of Concourse Way	70.1	70.0	-0.1
119	West of La Cienega Boulevard	70.1	69.8	-0.3
	Lincoln Boulevard			
23	South of La Tijera Boulevard	74.1	74.3	0.2
64	North of Sepulveda Boulevard	-	-	-
	111th Street			
96	East of Aviation Boulevard	59.8	61.1	1.3
123	West of La Cienega Boulevard	59.0	58.0	-1.0
	104th Street			
95	East of Aviation Boulevard	55.4	53.9	-1.5
121	West of La Cienega Boulevard	57.1	56.5	-0.6

SOURCE: Meridian Consultants, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

[Draft]

Table 4.9.2-7: Future (2035) Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2035 WITHOUT PROJECT (CNEL)	2035 WITH PROJECT (CNEL)	COMPARISON OF 2035 WITH PROJECT TO 2035 WITHOUT PROJECT CONDITIONS (CNEL)
	Sepulveda Boulevard			
62	South of La Tijera Boulevard	71.9	71.7	-0.2
63	North of Westchester Parkway	72.2	72.1	-0.1
63	South of Westchester Parkway	72.3	72.1	-0.2
64	North of Lincoln Boulevard	71.2	71.4	0.2
64	South of Lincoln Boulevard	75.4	75.6	0.2
65	North of Century Boulevard	78.8	78.5	-0.3
65	South of Century Boulevard	78.5	78.5	0.0
66	North of I-105 Westbound Ramps	79.5	79.3	-0.2
66	South of I-105 Westbound Ramps	77.2	77.0	-0.2
67	North of Imperial Highway	77.7	77.6	-0.1
	Westchester Parkway			
63	East of Sepulveda Boulevard	61.3	61.1	-0.2
75	West of Sepulveda Eastway	61.5	61.4	-0.1
75	East of Sepulveda Eastway	64.1	64.0	-0.1
77	West of Jenny Avenue	63.5	64.9	1.4
77	East of Jenny Avenue	63.8	65.0	1.2
81	West of Airport Boulevard	63.8	65.0	1.2
	Arbor Vitae Street			
81	East of Airport Boulevard	64.6	64.6	0.0
93	West of Aviation Boulevard	63.6	63.2	-0.4
93	East of Aviation Boulevard	67.4	66.9	-0.5
102	West of Isis Avenue	67.3	67.0	-0.3
102	East of Isis Avenue	67.3	67.6	0.3
117	West of La Cienega Boulevard	66.6	68.1	1.5
	Sepulveda Boulevard			
64	South of Lincoln Boulevard	74.7	74.9	0.2
65	North of Century Boulevard	78.2	77.8	-0.4
	Airport Boulevard			
81	South of Westchester Parkway	65.4	64.0	-1.4
82	North of 96th Street	65.1	63.9	-1.2
82	South of 96th Street	64.0	62.9	-1.1
83	North of 98th Street	67.5	66.3	-1.2
83	South of 98th Street	62.0	61.2	-0.8
84	North of Century Boulevard	65.6	64.2	-1.4
	Aviation Boulevard			
93	South of Arbor Vitae Street	62.3	63.4	1.1
94	North of Century Boulevard	72.4	74.7	2.3
94	South of Century Boulevard	69.9	70.5	0.6
95	North of 104th Street	69.9	70.6	1.0
95	South of 104th Street	69.3	70.0	0.7
96	North of 111th Street	69.2	69.5	0.3
96	South of 111th Street	70.3	68.5	-1.8
97	North of Imperial Highway	70.3	68.9	-1.4

Table 4.9.2-7: Future (2035) Modeled Roadway Noise Levels

STUDY INTERSECTION	ROADWAY SEGMENT	2035 WITHOUT PROJECT (CNEL)	2035 WITH PROJECT (CNEL)	COMPARISON OF 2035 WITH PROJECT TO 2035 WITHOUT PROJECT CONDITIONS (CNEL)
	La Cienega Boulevard			
117	South of Arbor Vitae Street	64.0	63.8	-0.2
118	North of I-405 Southbound Ramps	64.2	64.1	-0.1
118	South of I-405 Southbound Ramps	63.4	63.0	-0.4
119	North of Century Boulevard	63.3	63.0	-0.3
119	South of Century Boulevard	63.6	63.4	-0.2
120	North of I-405 Southbound Ramps	63.9	63.7	-0.2
120	South of I-405 Southbound Ramps	62.8	62.9	0.1
121	North of 104th Street	62.8	62.9	0.1
121	South of 104th Street	63.0	63.1	0.1
122	North of Lennox Boulevard	63.0	63.0	0.0
122	South of Lennox Boulevard	63.0	63.1	0.1
123	North of 111th Street	63.0	63.1	0.1
123	South of 111th Street	63.1	62.8	-0.3
124	North of I-405 Southbound Ramps	63.1	62.9	-0.2
124	South of I-405 Southbound Ramps	63.1	62.6	-0.5
125	North of Imperial Highway	62.4	61.9	-0.5
	Century Boulevard			
78	East of Avion Drive	74.5	73.4	1.1
84	West of Airport Boulevard	74.2	73.4	-0.8
84	East of Airport Boulevard	71.3	69.4	-1.9
91	West of Bellanca Avenue	71.3	71.3	0.0
91	East of Bellanca Avenue	71.8	71.3	-0.5
94	West of Aviation Boulevard	71.8	71.2	-0.6
94	East of Aviation Boulevard	69.2	68.1	-1.1
103	West of Concourse Way	68.7	67.5	-1.2
103	East of Concourse Way	70.6	70.3	-0.3
119	West of La Cienega Boulevard	71.0	70.3	-0.7
	Lincoln Boulevard			
23	South of La Tijera Boulevard	74.2	74.4	0.2
64	North of Sepulveda Boulevard	72.8	72.3	-0.5
	111th Street			
96	East of Aviation Boulevard	61.5	61.7	0.2
123	West of La Cienega Boulevard	58.5	57.9	-0.6
	104th Street			
95	East of Aviation Boulevard	60.8	54.6	-6.2
121	West of La Cienega Boulevard	57.6	56.9	-0.7

SOURCE: Meridian Consultants, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Future (2035) road traffic noise levels with Project conditions as compared to Future (2035) Without Project conditions at all modeled roadways would not exceed the 3 dB(A) CNEL threshold regardless of the compatibility classification of adjacent land uses; therefore, road traffic noise impacts would be less than cumulatively considerable, and therefore less than significant.

As shown above, when the future (2024 and 2035) With Project conditions are compared to the future (2024 and 2035) Without Project conditions, the contribution of the Project-related traffic impacts to future road traffic noise levels at each of the adjacent and surrounding roadways would not exceed the 3 dB(A) CNEL threshold over ambient conditions. Therefore, the proposed Project would not result in a cumulatively considerable contribution to future cumulative road traffic noise.

4.9.2.7 Mitigation Measures

As indicated in Section 4.9.2.5, road traffic noise impacts would be less than significant; therefore, no mitigation measures are required.

4.9.2.8 Level of Significance after Mitigation

Noise impacts from road traffic from the implementation of the proposed Project would be less than significant.

4.9.3 CONSTRUCTION TRAFFIC AND EQUIPMENT NOISE AND VIBRATION

4.9.3.1 Introduction

The analysis presented in this section addresses potential noise and vibration impacts associated with construction-related traffic and operation of construction equipment during development of the proposed Project.

4.9.3.2 Methodology

Construction Traffic Noise

The analysis of construction traffic noise impacts focused on off-airport areas by (1) identifying major roadways near the Airport that may be used for construction worker commute routes or truck haul routes; (2) generally identifying the nature and location of noise-sensitive receptors along those routes; and (3) evaluating the traffic characteristics along those routes, specifically as such characteristics relate to existing traffic volumes. The methodology beyond this point is similar to that identified for Road Traffic Noise, as discussed in Section 4.9.2.2 and explained in detail in Appendix M.

Construction Equipment Noise

Construction activities generate noise from the operation of equipment required for demolition and construction of various facilities. Noise impacts from on-site construction and staging of construction trucks were evaluated by determining the noise levels generated by different types of construction activity, calculating the construction-related noise level at nearby noise-sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without Project-related construction noise). More specifically, the following steps were undertaken to calculate construction-period noise levels:

1. Ambient noise levels at surrounding noise-sensitive receptor locations were modeled based on existing noise in proximity to the nearby noise-sensitive receptors, as shown in **Table 4.9.3-1.**
2. Typical noise levels for each type of construction equipment were obtained from FHWA's Roadway Construction Noise Model. A sample of typical construction equipment noise levels is shown in **Table 4.9.3-2**. Construction equipment, including number and type of equipment, was identified for each phase/component of construction.
3. Distances between construction site and staging area locations (noise source), and surrounding noise-sensitive receptors were measured using Project plans and aerial imagery.
4. Construction traffic and equipment noise levels were calculated for noise-sensitive receptor locations based on the conventional standard point source noise-distance attenuation factor of 4.5 to 6.0 dBA for each doubling of distance. Construction noise levels were quantified at predetermined distances from the site using the L_{eq} metric.
5. Calculated noise levels associated with Project construction at noise-sensitive receptor locations were then compared to estimated existing noise levels and the construction noise significance thresholds identified below.

Ambient noise level measurements were taken at each of fifteen (15) receptor locations using calibrated precision integrating sound level meters (SLMs) between July 1, 2015, and August 4, 2015. These locations represent the noise-sensitive receptors that would most likely be affected by construction noise. The noise meters were placed 5 feet above ground level, with test periods of 20-minute intervals at each location. The maximum, minimum, and equivalent steady-state sound level (L_{eq}) was collected for each site logged in 1-minute intervals. Ambient noise levels are presented in Section 4.9.3.3 later in this section. Ambient noise measurements were collected during a continuous 24-hour period, as recommended by the Federal Transit Administration.[6] These noise measurement locations are assumed to be representative of other surrounding sensitive receptors in proximity to the Project site.

A description of the Project area noise survey, including noise measurement output data and field notes for each location, can be found in the noise data collection technical memorandum, provided in Appendix M. **Figure 4.9.3-1** identifies the locations of the 15 noise-sensitive receptors selected for the road traffic noise impacts analysis in the vicinity of the Project area. The locations are described by the nearest approximate address and the type of adjacent land use, as shown in Table 4.9.3-1. It is important to note that receptors RP6 through RP14 would be acquired by LAWA and demolished prior to Project implementation.

6 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

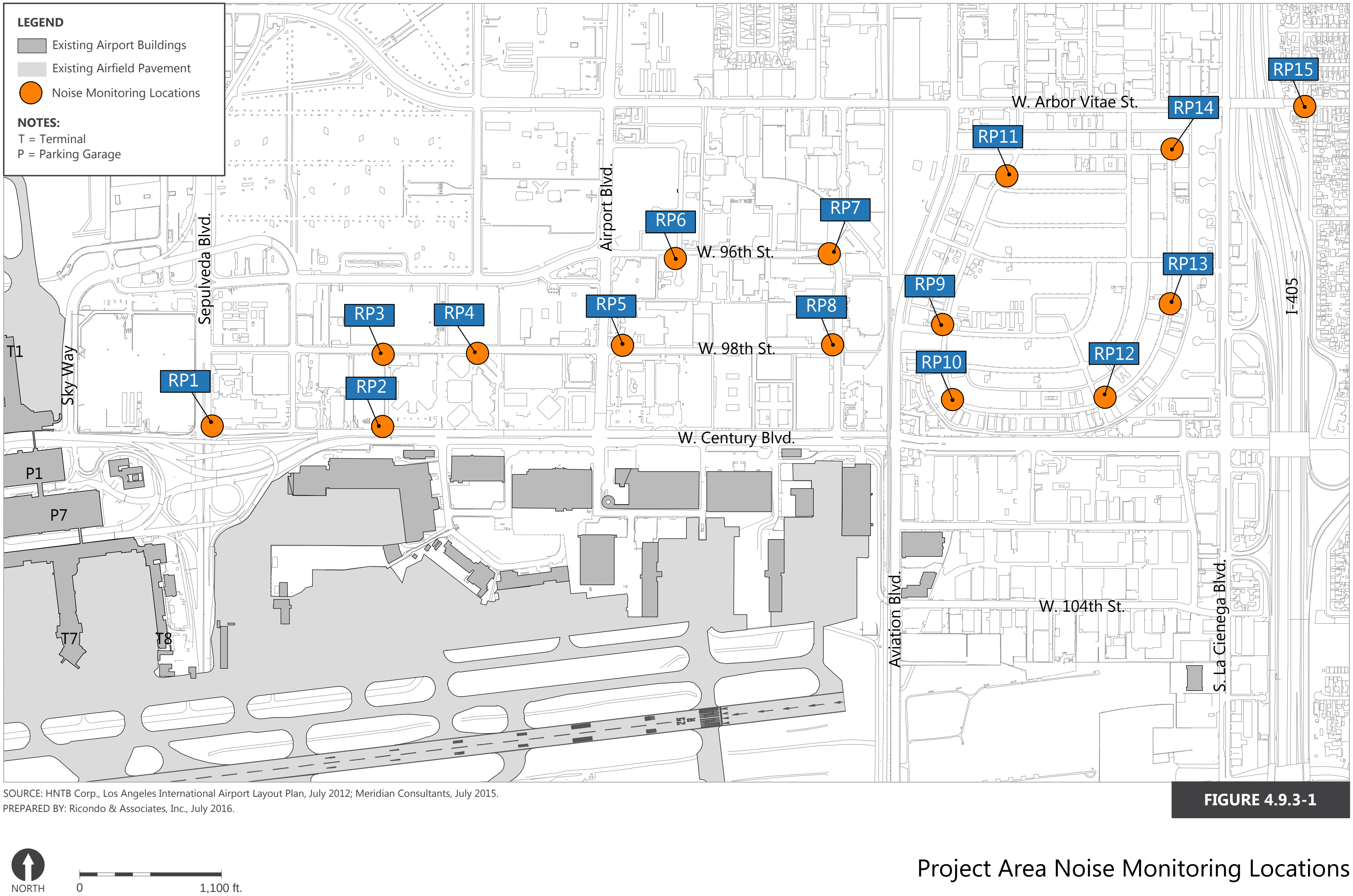
Table 4.9.3-1: Project Area Existing Ambient Noise Receptors

RECEPTOR ID	EXISTING LAND USE	APPROXIMATE ADDRESS
RP1	Concourse Hotel	6225 W Century Blvd, Los Angeles
RP2	LAX Sheraton Gateway Hotel	6107 W 98th Street, Los Angeles
RP3	LAX Sheraton Gateway Hotel	6101 W Century Blvd, Los Angeles
RP4	Office Building	6052 W 98th St, Los Angeles
RP5	Four Points Sheraton Hotel	9750 Airport Blvd, Los Angeles
RP6[1/]	Residential Development	9520 Belford Ave, Los Angeles
RP7[1/]	Residential Development	5651 W 96th St, Los Angeles
RP8[1/]	Residential Development	5705 W 98th St, Los Angeles
RP9[1/]	Residential Development	9329 Isis Ave, Los Angeles
RP10[1/]	Bright Star Secondary Charter Academy/Residential Development	5431 W 98th St, Los Angeles
RP11[1/]	Residential Development	5450 W 99th Pl, Los Angeles
RP12[1/]	Residential Development	9312 Glasgow Pl, Los Angeles
RP13[1/]	Residential Development	9714 Glasgow Pl, Los Angeles
RP14[1/]	Residential Development	9846 Glasgow Pl, Los Angeles
RP15	Residential Development	700 W Arbor Vitae St, Los Angeles

NOTE:

1/ Existing facility would be acquired and demolished prior to Project implementation.

SOURCE: Appendix M of this EIR.
PREPARED BY: Ricondo & Associates, Inc., September 2016.



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; Meridian Consultants, July 2015.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

FIGURE 4.9.3-1

Project Area Noise Monitoring Locations

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Table 4.9.3-2: Typical Construction Equipment Noise Levels

EQUIPMENT	ACOUSTICAL USAGE FACTOR (%)	ACTUAL MEASURES LMAX (DBA) @ 50 FEET
All Other Equipment > 5 HP	50	85[1/]
Auger Drill Rig	20	84
Backhoe	40	78
Bar Bender	20	80[1/]
Blasting	N/A	94[1/]
Boring Jack Power Unit	50	83
Chain Saw	20	84
Clam Shovel (dropping)	20	87
Compactor (ground)	20	83
Compressor (air)	40	78
Concrete Batch Plant	15	83[1/]
Concrete Mixer Truck	40	79
Concrete Pump Truck	20	81
Concrete Saw	20	90
Crane	16	81
Dozer	40	82
Drill Rig Truck	20	79
Drum Mixer	50	80
Dump Truck	40	76
Excavator	40	81
Flat Bed Truck	40	74
Front End Loader	40	79
Generator	50	81
Generator (<25KVA, VMS Signs)	50	73
Gradall	40	83
Grader	40	85[1/]
Grapple (on backhoe)	40	87
Horizontal Boring Hydraulic Jack	25	82
Hydra Break Ram	10	90[1/]
Impact Pile Driver	20	101
Jackhammer	20	89
Man Lift	20	75
Mounted Impact Hammer (hoe ram)	20	90
Pavement Scarifier	20	90
Paver	50	77
Pickup Truck	40	75
Pnematic Tools	50	85

Table 4.9.3-2: Typical Construction Equipment Noise Levels

EQUIPMENT	ACOUSTICAL USAGE FACTOR (%)	ACTUAL MEASURES LMAX (DBA) @ 50 FEET
Pumps	50	81
Refrigerator Unit	100	73
Rivit Buster/Chipping Gun	20	79
Rock Drill	20	81
Roller	20	80
Sand Blasting (single nozzle)	20	96
Scraper	40	84
Sheers (on backhoe)	40	96
Slurry Plant	100	78
Slurry Trenching Machine	50	80
Soil Mix Drill Rig	50	80[1/]
Tractor	40	84[1/]
Vacuum Excavator (Vac-Truck)	40	85
Vacuum Street Sweeper	10	82
Ventilation Fan	100	79
Vibrating Hopper	50	87
Vibratory Concrete Mixer	20	80
Vibratory Pile Driver	20	101
Warning Horn	5	83
Welder/Torch	40	74

NOTE:

1/ Spec. 721.560 Lmax @ 50 feet.

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *FHWA Highway Construction Noise Handbook, Chapter 9, Construction Equipment Noise Levels and Ranges*, August 2006.

PREPARED BY: Ricondo & Associates, Inc. September 2016.

Construction of the proposed Project would occur in two separate phases. The first phase would be constructed over approximately 6 years, beginning towards the end of 2017 and finishing in approximately 2023. The second phase would begin after Phase 1 at approximately 2025 and be completed by 2035. To meet schedule constraints, multiple Project components may be under construction concurrently.

Noise levels from outdoor construction activities, independent of background ambient noise levels, indicate that the noisiest phases of construction are typically during excavation and grading, and that noise levels from equipment with mufflers are typically 86 dB(A) Leq at 50 feet from the noise source.[7] This type of sound

7 City of Los Angeles, *L.A. Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles, Section I.1, Construction Noise*, 2006.

typically dissipates at a rate of 4.5 dB(A) to 6 dB(A) for each doubling of distance. The sound drop off rate does not take into account any intervening shielding (including landscaping or trees) or barriers, such as structures or hills between the noise source and noise receptor. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

Construction equipment noise was evaluated by determining the noise levels generated by typical outdoor construction activity and calculating the potential for exposure to noise-sensitive uses. Representative ambient noise levels (non-construction noise) at the noise-sensitive uses were determined based on information contained in the LAX Master Plan EIR[8] and the Airport noise contour shown on a recent quarterly noise report (i.e., Second Quarter 2016).[9]

In order to calculate construction CNEL, hourly activity or utilization factors (i.e., the percentage of normal construction activity that would occur, or construction equipment that would be active, during each hour of the day) were estimated. The hourly activity factors were expressed as percentage of time that construction activities would emit average noise levels equaling 86 dBA Leq at 50 feet from the activity.[10] The hourly activity levels may be considered average values. Hourly activity factors for an average day were delineated by construction shift estimates. The hourly activity factors were used in computing average hourly construction Leq levels, which were then applied a penalty-weighting of 5 dB(A) to the construction noise levels in the evening (7:00 a.m. to 9:59 a.m.), and 10 dB(A) during nighttime hours (10:00 PM to 6:59 AM).

Construction equipment noise impacts were assessed by identifying the closest noise-sensitive receptors to each construction area.

Construction Equipment Vibration

Impacts due to construction activities were evaluated by identifying vibration sources (i.e., construction equipment); measuring the distance between vibration sources and surrounding structure locations; and making a significance determination. The vibration source levels for various types of equipment were based on data provided by the Federal Transit Administration (FTA).[11]

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8 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements,* Section 4.1, April 2004.

9 City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, Second Quarter 2016, Los Angeles International Airport,* August 10, 2016, Available: http://www.lawa.org/uploadedFiles/LAX/pdf/2q16%20Quarterly%20Report.pdf, accessed August 30, 2016.

10 The use of 86 dBA Leq at 50 feet as an overall construction noise level is based on Section 4.1.3.3 (page 4-49) of the LAX Master Plan Final EIR.

11 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

4.9.3.3 Existing Conditions

Noise

In general, the noise setting at and around LAX is influenced primarily by aircraft operations (takeoffs and landings) and traffic along major roadways. The existing aircraft noise levels at and around LAX delineated in the LAX 2nd Quarter 2016 Noise Monitoring Report[12] are representative of existing (baseline) ambient noise levels at the time the LAX Landside Access Modernization Program Notice of Preparation was published.

Ambient levels of existing noise were measured (24-hour CNEL) at fifteen (15) representative locations in the Project area. The results of the noise monitoring are presented in **Table 4.9.3-3**. As shown, 24-hour CNEL values within the Project area ranged from a high of 77.4 dB(A) (RP2 – LAX Sheraton Gateway Hotel) to a low of 62.7 dB(A) (RP14 – Residential Development). As discussed in Section 4.9.2.2, ambient levels of existing noise were measured (20-minute Leq) at ten (10) intersections within the larger Traffic Study Area. The 20-minute Leq values within the Traffic Study Area ranged from a high of 76.2 dB(A) to a low of 69.7 dB(A).

In addition to aircraft activities, the noise setting around LAX is influenced by major freeways, including I-405 and I-105, and several major arterial roads, including but not limited to Imperial Highway, Sepulveda Boulevard, Century Boulevard, and Lincoln Boulevard. Noise-sensitive receptors in proximity to LAX include residential uses, schools, places of worship, parks, and library uses in Westchester and Playa del Rey to the north, Inglewood and Lennox to the east, and El Segundo and Del Aire to the south and southeast, respectively. There are currently residential units within the Manchester Square and Belford areas, as well as two charter school facilities within Manchester Square. Both the Manchester Square and Belford areas are part of the LAX voluntary acquisition program, which is intended to remove existing noise-sensitive residential units from areas subject to high noise levels overflights; most of Manchester Square and Belford has been vacated (see Section 4.8, *Land Use and Planning*, and Section 4.10, *Population and Housing*, for further discussion of the Manchester Square and Belford areas).

Existing ambient noise levels in terms of average hourly Leq in the area of Playa del Rey closest to the Airport are estimated to be approximately 58 dB(A) CNEL (June 4, 2016 at PDR2) to 71 dB(A) CNEL (June 18, 2016 at PDR1) based on the noise monitoring data gathered at the LAWA Noise Monitoring Station PDR1 and PDR2.[13] This estimate is based on the locations of those areas relative to nearby dominant noise sources such as aircraft and roadway operations.

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12 City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, Second Quarter 2016, Los Angeles International Airport,* August 10, 2016, Available: http://www.lawa.org/uploadedFiles/LAX/pdf/2q16%20Quarterly%20Report.pdf, accessed August 30, 2016.

13 City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, Second Quarter 2016, Los Angeles International Airport,* August 10, 2016, Available: http://www.lawa.org/uploadedFiles/LAX/pdf/2q16%20Quarterly%20Report.pdf, accessed August 30, 2016.

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Table 4.9.3-3: Project Area Existing Ambient Noise Levels

RECEPTOR ID	EXISTING LAND USE	DURATION	24-HR CNEL (DBA)	1-HOUR MAX L_{EQ} (DBA)
RP1	Concourse Hotel	1 hour	N/A	76.3 [1/]
RP2	LAX Sheraton Gateway Hotel	24 hours	77.4	75.3
RP3	LAX Sheraton Gateway Hotel	24 hours	72.4	71.4
RP4	Office Building	24 hours	75.9	75.6
RP5	Four Points Sheraton Hotel	24 hours	71.7	71.7
RP6	Residential Development	24 hours	68.2	66.4
RP7	Residential Development	24 hours	71.7	70.7
RP8	Residential Development	24 hours	72.4	72.7
RP9	Residential Development	24 hours	70.0	69.3
RP10	Bright Star Secondary Charter Academy/Residential Development	24 hours	67.3	67.6
RP11	Residential Development	24 hours	64.7	63.3
RP12	Residential Development	24 hours	69.9	69.7
RP13	Residential Development	24-hours	64.4	65.4
RP14	Residential Development	24 hours	62.7	65.5
RP15	Residential Development	24 hours	69.8	67.3

NOTE:

1/ Two peak-hour measurements at the Concourse Hotel were supplemented due to technical complications with the 24-hour measurement. The higher of the two peak-hour measurements at the Concourse Hotel was 76.3 dBA.

SOURCE: Appendix M of this EIR, September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Existing ambient noise levels at the residential development in Manchester Square and within the communities of Inglewood and Lennox located closest to the Airport, are estimated to be between 56 dB(A) CNEL (June 3-5, 2016 at ING 7) to 79 dB(A) CNEL (June 29, 2016 at ING 8), based on the noise monitoring data gathered at the LAWA Noise Monitoring Station ING1 though ING8 and LNX1 through LNX4.[14] This estimate is based on the locations of those areas relative to nearby dominant noise sources such as aircraft and their proximity to the 405 Freeway.

Existing ambient noise levels at the residential development in Westchester are estimated to be between 51 dB(A) CNEL (June 5, 2016 at WCH1) to 79 dB(A) CNEL (June 22-23, 2016 at WCH5) based on the noise

14 City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, Second Quarter 2016, Los Angeles International Airport,* August 10, 2016, Available: http://www.lawa.org/uploadedFiles/LAX/pdf/2q16%20Quarterly%20Report.pdf, accessed August 30, 2016.

monitoring data gathered at the LAWA Noise Monitoring Station WCH1 through WCH6.[15] This estimate is based on the locations of those areas relative to nearby dominant noise sources such as aircraft and roadway operations.

Vibration

An ambient vibration monitoring survey was undertaken to establish existing ground-borne vibration levels at various locations near the proposed Project. The monitoring was conducted to provide data on ambient ground-borne vibration generated by traffic and operation of current establishments in the area surrounding LAX. The locations selected were either sensitive land uses (residences and hotels) or buildings that were close to where the components of the proposed Project would be constructed. Fifteen ground vibration monitoring locations were established, as shown on **Figure 4.9.3-2**.

Ground-borne vibration measurements were collected in accordance with FTA guidance[16] at each of the 15 monitoring locations. Outdoor field measurements were taken using remote monitoring systems and an accelerometer on July 24, 2015. Accelerometers were placed on smooth surfaces on the ground to ensure that vertical vibration was accurately captured. The vibration intervals were set to 30 minutes at each location. A detailed discussion of the vibration measurements methodology is provided in the vibration data technical memorandum, which can be found in Appendix M. Existing ground-borne vibration levels, as shown in **Table 4.9.3-4**, are attributed to road traffic and normal operations of establishments in the Project area.

Vibration consists of rapidly unpredictable motions. Ground-borne vibration is the perceptible movement of building floors, rattling windows and doors, shaking of items on shelves or walls, and rumbling sounds. The root mean square (RMS) amplitude of a motion over a 1-second period is commonly used to predict human response to vibration. The motion due to ground-borne vibration is described in vibration velocity levels, measured in decibels referenced to 1 microinch per second and expressed as vibration decibels (VdB). Ground-borne vibration is not a common environmental problem unlike roadway noise or transit noise.

As shown in Table 4.9.3-4, the average vibration velocities ranged from a low of 38 VdB at RV13 to a high of 58 VdB at RV8. These vibration velocities are considered to be below the approximate threshold of perception for many humans.[17] Aside from roadway traffic, there were no identifiable sources of substantial vibration at any of the survey locations. The collected data constitute baseline environmental vibration conditions, which were used in determination of incremental increases that may result from equipment vibration associated with Project construction.

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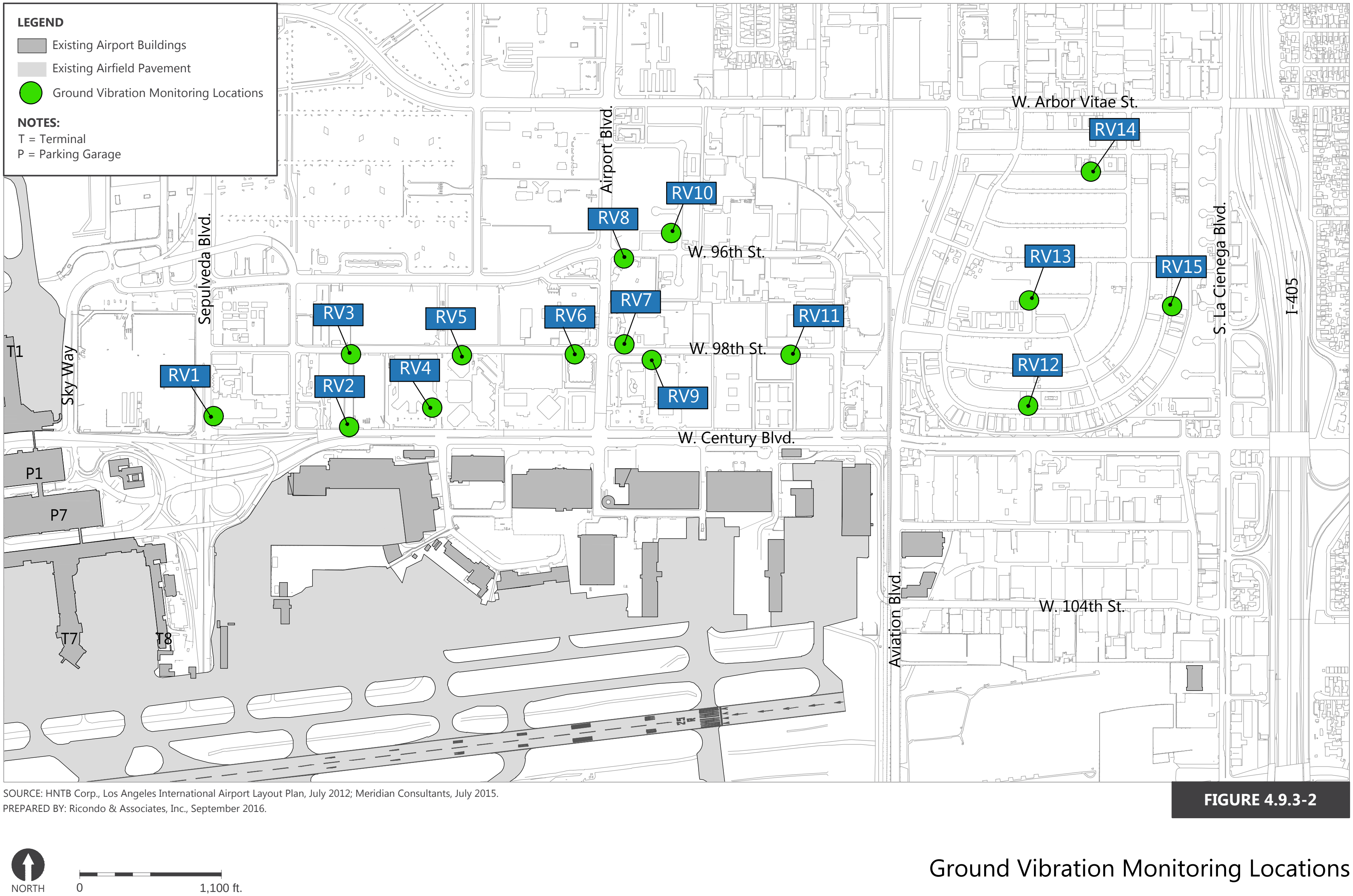
15 City of Los Angeles, Los Angeles World Airports, *California State Airport Noise Standards Quarterly Report, Second Quarter 2016, Los Angeles International Airport,* August 10, 2016, Available: http://www.lawa.org/uploadedFiles/LAX/pdf/2q16%20Quarterly%20Report.pdf, accessed August 30, 2016.

16 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

17 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; Meridian Consultants, July 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.9.3-2

Ground Vibration Monitoring Locations

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Table 4.9.3-4: Project Area Existing Ground-Borne Vibration Results

RECEPTOR ID	APPROXIMATE ADDRESS	DURATION	VIBRATION VELOCITY (VDB)
RV1	6225 W Century Blvd, Los Angeles	30 minutes	55
RV2	6151 W Century Blvd, Los Angeles	30 minutes	56
RV3	6141 W Century Blvd, Los Angeles	30 minutes	57
RV4	6101 W Century Blvd, Los Angeles	30 minutes	56
RV5	6032 W Century Blvd, Los Angeles	30 minutes	49
RV6	9801 Airport Blvd, Los Angeles	30 minutes	56
RV7	9750 Airport Blvd, Los Angeles	30 minutes	48
RV8	9620 Airport Blvd, Los Angeles	30 minutes	58
RV9	5855 W Century Blvd, Los Angeles	30 minutes	47
RV10[1/]	9520 Belford Ave, Los Angeles	30 minutes	48
RV11	5730 W 98th St, Los Angeles	30 minutes	50
RV12[1/]	5357 99th Pl, Los Angeles	30 minutes	51
RV13[1/]	5431 W 98th St, Los Angeles	30 minutes	38
RV14[1/]	5324 W 93rd St, Los Angeles	30 minutes	39
RV15	9714 Glasgow Pl, Los Angeles	30 minutes	46

NOTE:

1/ Existing facility would be acquired and demolished prior to Project implementation.

SOURCE: Meridian Consultants, 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

4.9.3.4 Thresholds of Significance

The following CEQA thresholds of significance where applicable are based the *L.A. CEQA Thresholds Guide*[18] for the assessment of community noise exposure and are applicable to the proposed Project construction traffic and equipment noise impacts analysis.

Construction Traffic Noise

There is no threshold for construction traffic noise in the *L.A. CEQA Thresholds Guide*. A significant construction traffic noise impact would occur if the proposed Project would result in the following condition:

18 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

- Ambient noise level measured at the property line of affected uses to increase by 3 dB(A) or more in CNEL

Construction Equipment Noise

A significant construction equipment noise impact would occur if the Project would result in one or more of the following conditions:

- Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dB(A) or more at a noise-sensitive use;
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dB(A) or more at a noise-sensitive use; or
- Construction activities would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday; before 8:00 a.m. or after 6:00 p.m. on Saturday; or at any time on Sunday.

Construction Equipment Vibration

There are no adopted City standards of thresholds of significance for vibration. Based on the FTA guidelines,[19] the proposed Project would have a significant impact related to vibration if vibration levels would exceed the damage criteria listed below:

- Reinforced-concrete, steel, or timber (no plaster) would exceed 0.5 peak particle velocity (PPV)[20] (inches per second);
- Engineered concrete and masonry (no plaster) would exceed 0.3 PPV;
- Non-engineered timber and masonry buildings would exceed 0.2 PPV; or
- Buildings extremely susceptible to vibration damage would exceed 0.12 PPV.

4.9.3.5 Impact Analysis

LAX Landside Access Modernization Program Project

Construction Traffic Noise

Construction traffic would generate noise along access routes to and from the Project area. Construction activities would require the movement of heavy equipment throughout the Project area during respective construction phases and for each specialized construction activity (i.e., demolition, grading, etc.). All staging

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19 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

20 When assessing the potential for building damage, ground-borne vibration is usually expressed in terms of the peak particle velocity (PPV) in units of inches per second. The peak particle velocity is defined as the maximum instantaneous positive or negative peak of the vibration signal. PPV is often used in monitoring of blasting vibration since it is related to the stresses that are experienced by buildings.

would occur within each phasing area; queuing of construction traffic on public streets would not be permitted. Overall, the daily transportation of construction workers and the hauling of materials both on and off the Project site would cause increases in noise levels along study area roadways.

Construction-related trucks would be restricted to designated routes ensuring these vehicles utilize the nearby freeways and major arterials to the maximum extent and minimize use of local roadways. Construction routes would be designated for freeways and major arterials around the Airport, avoiding minor arterials and local streets. These freeways and major arterials are high-volume routes that are already at LOS C or worse. Consequently, the total trip generation is well below the existing traffic volumes on the freeways and major arterial streets around the Airport. Construction-related traffic would not result in a doubling or tripling of existing daily traffic volumes on streets around the Airport. A doubling of sound energy results in a 3 dB(A) increase, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. As a result, the construction traffic noise impact associated with the proposed Project would be less than significant because noise increases would be less than 3 dB(A) $L_{eq(h)}$.

Construction Equipment Noise

Phase 1 Activities

Phase 1 activities would be constructed over approximately 6 years, beginning towards the end of 2017 and finishing in approximately 2023. The first phase would include enabling projects and the construction of the APM operating system and fixed facilities, the CONRAC, the ITF West, the ITF East, and a portion of the major roadway improvements.

Major roadway improvements constructed during the first phase of the Project include:

- New ‘A’ Street (W. Century Boulevard to Westchester Parkway/W. Arbor Vitae Street)
- New ‘B’ Street (New ‘A’ Street to Airport Boulevard)
- W. 96th Street (Airport Boulevard to Bellanca Avenue)
- New ‘D’ Street (W. 96th Street to W. Arbor Vitae Street)
- W. Arbor Vitae Street (Aviation Boulevard to S. La Cienega Boulevard)
- Aviation Boulevard (W. Century Boulevard to W. Arbor Vitae Street)
- S. La Cienega Boulevard (W. 98th Street to W. Arbor Vitae Street)
- New W. 98th Street Segment (Aviation Boulevard to S. La Cienega Boulevard)
- New Concourse Way (W. Century Boulevard to Arbor Vitae Street)
- Southbound S. Sepulveda Boulevard to World Way (departures and arrivals) Ramps
- Airport Boulevard (W. 98th Street to W. Arbor Vitae Street)
- W. 98th Street (Airport Boulevard to Aviation Boulevard)
- W. Century Boulevard (New ‘A’ Street to Aviation Boulevard)
- S. La Cienega Boulevard/I-405 On- and Off-Ramps
- New ‘C’ Street (Imperial Highway to W. 111th Street)

Central Terminal Area

Construction-related activities in the CTA include:

- Demolition of LAWA Administration Building
- Demolition of the Bob Hope Hollywood United Service Organization Building
- Demolition of the Drug Enforcement Administration Building
- Demolition of the operations trailers adjacent to Parking Garage P2A
- Demolition and reconstruction of Upper and Lower West Way
- Demolition and reconstruction of Parking Garage P2A
- Demolition and reconstruction of Parking Garage P2B
- Demolition and reconstruction of Parking Garage P5
- Improvements to Center Way
- Construction of the APM Guideway, Stations, Pedestrian Walkways, and Vertical Circulation Cores

The closest noise-sensitive receptor to the CTA construction area is a hotel, Concourse Hotel (RP1), on the corner of W. Century Boulevard and Sepulveda Boulevard approximately 675 feet to the northeast of the LAWA Administration Building. All other construction activities, except for portions of the APM guideway which is discussed separately, are located farther west.

Table 4.9.3-5 presents the estimated daily average CNEL construction noise level for the APM guideway and station components that are located in the CTA. Project components within the CTA would be constructed over an 18 hour/day schedule with two shifts: a "night" shift would occur from approximately 1:00 a.m. to 9:00 a.m., and a "day" shift would occur from approximately 9:00 a.m. to 7:00 p.m. Minimal construction would occur between 7:00 p.m. and 1:00 a.m. Approximately 65 percent of the CTA APM construction activity would occur during the 8-hour "night" shift and 35 percent would occur during the 10-hour "day" shift.

Table 4.9.3-6 presents the estimated daily average CNEL construction noise levels for the APM guideway and stations located outside of the CTA. This activity would occur over a two 8-hour shift work day (16 hours/day): the "morning" shift would occur between approximately 7:00 a.m. and 3:00 p.m., and the "afternoon" shift would take place between approximately 3:00 p.m. and 11:00 p.m. Approximately 60 percent of the construction activity would occur during the "morning" shift and 40 percent would occur during the "afternoon" shift.

Table 4.9.3-7 presents the estimated daily average CNEL construction noise level for all the other Project elements (excluding the APM Guideway and CTA APM Stations) located outside the CTA. This activity would occur during the same two 8-hour shift work day (16 hours/day): the "morning" shift would occur between approximately 7:00 a.m. and 3:00 p.m., and the "afternoon" shift would take place between approximately 3:00 p.m. and 11:00 p.m. Approximately 80 percent of the construction activity would occur during the "morning" shift and 20 percent would occur during the "afternoon" shift.

Table 4.9.3-5: Estimate of Hourly Construction Activity Levels (APM Guideway and Station Components)

	HOUR	HOURLY ACTIVITY FACTOR	HOURLY AVERAGE SOUND LEVEL (LEQ[1/])	WEIGHTED-HOURLY AVERAGE SOUND LEVEL (LEQ + PENALTY[2/])
NIGHTTIME	12:00 a.m.–1:00 a.m.	50%	83.0	93.0
	1:00 a.m.–2:00 a.m.	50%	83.0	93.0
	2:00 a.m.–3:00 a.m.	50%	83.0	93.0
	3:00 a.m.–4:00 a.m.	50%	83.0	93.0
	4:00 a.m.–5:00 a.m.	50%	83.0	93.0
	5:00 a.m.–6:00 a.m.	50%	83.0	93.0
	6:00 a.m.–6:59 a.m.	90%	85.5	95.5
DAYTIME	7:00 a.m.–8:00 a.m.	100%	86.0	86.0
	8:00 a.m.–9:00 a.m.	100%	86.0	86.0
	9:00 a.m.–10:00 a.m.	100%	86.0	86.0
	10:00 a.m.–11:00 a.m.	100%	86.0	86.0
	11:00 a.m.–12:00 p.m.	100%	86.0	86.0
	12:00 p.m.–1:00 p.m.	100%	86.0	86.0
	1:00 p.m.–2:00 p.m.	100%	86.0	86.0
	2:00 p.m.–3:00 p.m.	100%	86.0	86.0
	3:00 p.m.–4:00 p.m.	100%	86.0	86.0
	4:00 p.m.–5:00 p.m.	100%	86.0	86.0
	5:00 p.m.–6:00 p.m.	100%	86.0	86.0
	6:00 p.m.–6:59 p.m.	100%	86.0	86.0
EVENING	7:00 p.m.–7:59 p.m.	0%	0	0
	8:00 p.m.–8:59 p.m.	0%	0	0
	9:00 p.m.–9:59 p.m.	0%	0	0
NIGHTTIME	10:00 p.m.–11:00 p.m.	0%	0	0
	11:00 p.m.–12:00 a.m.	0%	0	0
ESTIMATED CNEL[3/,4/]				**89.3**

NOTES:

1/ Noise value is calculated by adding the log10 value of the activity factor to 86 dBA Leq.

2/ The penalty value added to Leq is the same level used to calculate CNEL to account for the greater sensitivity of nearby land uses in the quieter hours between 7:00 p.m. and 7:00 a.m. During evening hours, 5 dBA is added to each hourly Leq. During nighttime hours, a 10 dBA weighting is applied to each hourly Leq.

3/ CNEL represent cumulative sound level at 50 feet from the source.

4/ Daily CNEL is calculated via the following equation: Average Daily CNEL = 10*(log(Sum of Hourly Leq energy levels)] – 13.8. (13.8 represents the log10 value of 24 hours, 10*log(24)).

SOURCE: Meridian Consultants, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

[Draft]

Table 4.9.3-6: Estimate of Hourly Construction Activity Levels (Outside CTA)

	HOUR	HOURLY ACTIVITY FACTOR	HOURLY AVERAGE SOUND LEVEL (LEQ[1/])	WEIGHTED-HOURLY AVERAGE SOUND LEVEL (LEQ + PENALTY[2/])
NIGHTTIME	12:00 a.m.–1:00 a.m.	0%	0	0
	1:00 a.m.–2:00 a.m.	0%	0	0
	2:00 a.m.–3:00 a.m.	0%	0	0
	3:00 a.m.–4:00 a.m.	0%	0	0
	4:00 a.m.–5:00 a.m.	0%	0	0
	5:00 a.m.–6:00 a.m.	0%	0	0
	6:00 a.m.–6:59 a.m.	0%	0	0
DAYTIME	7:00 a.m.–8:00 a.m.	100%	86.0	86.0
	8:00 a.m.–9:00 a.m.	100%	86.0	86.0
	9:00 a.m.–10:00 a.m.	100%	86.0	86.0
	10:00 a.m.–11:00 a.m.	100%	86.0	86.0
	11:00 a.m.–12:00 p.m.	100%	86.0	86.0
	12:00 p.m.–1:00 p.m.	100%	86.0	86.0
	1:00 p.m.–2:00 p.m.	100%	86.0	86.0
	2:00 p.m.–3:00 p.m.	100%	86.0	86.0
	3:00 p.m.–4:00 p.m.	100%	86.0	86.0
	4:00 p.m.–5:00 p.m.	100%	86.0	86.0
	5:00 p.m.–6:00 p.m.	100%	86.0	86.0
	6:00 p.m.–6:59 p.m.	100%	86.0	86.0
EVENING	7:00 p.m.–7:59 p.m.	75%	84.8	89.5
	8:00 p.m.–8:59 p.m.	75%	84.8	89.5
	9:00 p.m.–9:59 p.m.	75%	84.8	89.5
NIGHTTIME	10:00 p.m.–11:00 p.m.	50%	83.0	93.0
	11:00 p.m.–12:00 a.m.	0%	0	0
ESTIMATED CNEL[3/,4/]				**86.0**

NOTES:

1/ Noise value is calculated by adding the log10 value of the activity factor to 86 dBA Leq.

2/ The penalty value added to Leq is the same level used to calculate CNEL to account for the greater sensitivity of nearby land uses in the quieter hours between 7:00 p.m. and 7:00 a.m. During evening hours, 5 dBA is added to each hourly Leq. During nighttime hours, a 10 dBA weighting is applied to each hourly Leq.

3/ CNEL represent cumulative sound level at 50 feet from the source.

4/ Daily CNEL is calculated via the following equation: Average Daily CNEL = 10*(log(Sum of Hourly Leq energy levels)] – 13.8. (13.8 represents the log10 value of 24 hours, 10*log(24)).

SOURCE: Meridian Consultants, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

[Draft]

Table 4.9.3-7: Estimate of Hourly Construction Activity Levels (All Other Elements)

	HOUR	HOURLY ACTIVITY FACTOR	HOURLY AVERAGE SOUND LEVEL (LEQ[1/])	WEIGHTED-HOURLY AVERAGE SOUND LEVEL (LEQ + PENALTY[2/])
NIGHTTIME	12:00 a.m.–1:00 a.m.	0%	0	0
	1:00 a.m.–2:00 a.m.	0%	0	0
	2:00 a.m.–3:00 a.m.	0%	0	0
	3:00 a.m.–4:00 a.m.	0%	0	0
	4:00 a.m.–5:00 a.m.	0%	0	0
	5:00 a.m.–6:00 a.m.	0%	0	0
	6:00 a.m.–6:59 a.m.	0%	0	0
DAYTIME	7:00 a.m.–8:00 a.m.	100%	86.0	86.0
	8:00 a.m.–9:00 a.m.	100%	86.0	86.0
	9:00 a.m.–10:00 a.m.	100%	86.0	86.0
	10:00 a.m.–11:00 a.m.	100%	86.0	86.0
	11:00 a.m.–12:00 p.m.	100%	86.0	86.0
	12:00 p.m.–1:00 p.m.	100%	86.0	86.0
	1:00 p.m.–2:00 p.m.	100%	86.0	86.0
	2:00 p.m.–3:00 p.m.	100%	86.0	86.0
	3:00 p.m.–4:00 p.m.	100%	86.0	86.0
	4:00 p.m.–5:00 p.m.	100%	86.0	86.0
	5:00 p.m.–6:00 p.m.	100%	86.0	86.0
	6:00 p.m.–6:59 p.m.	100%	86.0	86.0
EVENING	7:00 p.m.–7:59 p.m.	75%	84.8	89.5
	8:00 p.m.–8:59 p.m.	75%	84.8	89.5
	9:00 p.m.–9:59 p.m.	75%	84.8	89.5
NIGHTTIME	10:00 p.m.–11:00 p.m.	50%	83.0	93.0
	11:00 p.m.–12:00 a.m.	0%	0	0
ESTIMATED CNEL[3/,4/]				**86.0**

NOTES:

1/ Noise value is calculated by adding the log10 value of the activity factor to 86 dBA Leq.

2/ The penalty value added to Leq is the same level used to calculate CNEL to account for the greater sensitivity of nearby land uses in the quieter hours between 7:00 p.m. and 7:00 a.m. During evening hours, 5 dBA is added to each hourly Leq. During nighttime hours, a 10 dBA weighting is applied to each hourly Leq.

3/ CNEL represent cumulative sound level at 50 feet from the source.

4/ Daily CNEL is calculated via the following equation: Average Daily CNEL = 10*(log(Sum of Hourly Leq energy levels)] – 13.8. (13.8 represents the log10 value of 24 hours, 10*log(24)).

SOURCE: Meridian Consultants, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

As explained in Section 4.9.3.2, construction equipment noise levels were calculated for noise-sensitive receptor locations based on the conventional standard point source noise-distance attenuation factor of 4.5 to 6.0 dBA for each doubling of distance. Construction noise levels were quantified at predetermined distances from the site using the L_{eq} metric. Calculated noise levels associated with Project construction at noise-sensitive receptor locations were then compared to estimated existing noise levels identified in Table 4.9.3-3 and the construction noise significance thresholds.

Based on an existing ambient noise level of 76.3 dB(A) CNEL in the area of the Concourse Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 100 feet. Noise sensitive uses in areas with existing ambient noise of 76.3 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of approximately 100 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 170 feet, construction equipment noise impacts on sensitive receptors from construction activities in the in CTA area would be less than significant because construction activities would not exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

Demolition of Delta Hangar Complex

Located at 6150 W. Century Boulevard, this building complex is located within the footprint of the proposed APM guideway alignment and would need to be demolished. Construction-related activities would include demolition and restoration. The closest noise-sensitive receptor to this construction area is a hotel, Concourse Hotel (RP1), located on the corner of W. Century Boulevard and Sepulveda Boulevard approximately 425 feet to the northwest.

Based on an existing ambient noise level of 76.3 dB(A) CNEL in the area of the Concourse Hotel - (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 100 feet. Noise sensitive uses in areas with existing ambient noise of 76.3 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of approximately 100 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 100 feet, construction equipment noise impacts on sensitive receptors from construction activities at the Delta Hangar Complex would be less than significant because construction activities would not exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

APM Guideway

Construction-related activities for the APM guideway would include foundations and columns, deck, and clearing and utilities. The guideway would be constructed in phases and for the most part would not be located near noise-sensitive receptors. The closest noise-sensitive receptor to the APM guideway construction area is a hotel, LAX Sheraton Gateway Hotel (RP2), located at 6101 W. Century Boulevard approximately 100 feet from the closest point of construction-related activities for the APM Guideway.

Based on existing ambient noise level of 77.4 dB(A) CNEL in the area of the Sheraton Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 85 feet. Noise sensitive uses in areas with exiting ambient noise of 77.4 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of approximately 85 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 85 feet, construction activities for the APM guideway would be less than significant because construction activities would not exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

Lot C Reconfiguration

Construction-related activities associated with the Lot C reconfiguration include:

- Reconfiguration of the Commercial Vehicle Lot
- Construction of a temporary Metro Bus Lot
- New Lot C Entry/Exit Plaza

The closest noise-sensitive receptor to this construction area is a residential development (RT4) north of Westchester Parkway, approximately 600 feet from the closest point of construction-related activities.

Based on an existing ambient noise level of 72.2 dB(A) CNEL in that area (refer to Table 4.9.2-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 190 feet. Noise sensitive uses with existing ambient noise of 72.2 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 190 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 190 feet, construction equipment noise impacts on sensitive receptors from construction activities at Lot C would be less than significant because construction activities would not exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

ITF West

Construction-related activities associated with the ITF West include:

- Demolition of the existing LAX City Bus Center
- Construction of ITF West
- Construction of New "B" Street
- Demolition of W. 96th Street between New 'A' Street and Airport Boulevard

The closest noise-sensitive receptor to this construction area is a hotel, Renaissance Hotel (RP5), north of Westchester Parkway, located on the corner of W. 98th Street and Airport Boulevard approximately 450 feet southeast of the ITF structure. Roadwork associated with the ITF West would be partially completed within 75 feet of the Renaissance Hotel.

Based on the existing ambient noise level of 71.7 dB(A) CNEL in the area of the Renaissance Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 210 feet. Noise sensitive uses with existing ambient noise of 71.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 210 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 210 feet, construction equipment noise impacts on sensitive receptors from construction activities at portions of the ITF West construction would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

APM Maintenance and Storage Facility

Construction-related activities associated with the APM MSF include:

- Demolition of remaining Belford Properties
- Construction of the APM MSF Building
- Construction of "D" Street

To allow construction of the APM MSF, the remaining residential property in the Belford area would need to be demolished. Construction-related activities for the APM MSF Building would include foundation, building, and site prep. The closest noise-sensitive receptor to this construction area is a hotel, Renaissance Hotel (RP5), located on the corner of Airport Boulevard and W. 96th Street approximately 95 feet south from the closest point of construction-related activities.

Based on existing ambient noise level of 71.7 dB(A) CNEL in the area of the Renaissance Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 210 feet. Noise sensitive uses with existing ambient noise of 71.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 210 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 210 feet, construction equipment noise impacts on sensitive receptors from construction activities for the APM MSF would exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

Demolition of Remaining Buildings in Manchester Square/Construction Staging Area

To allow construction of the CONRAC and ITF East, the remaining residential property in the Manchester Square area would need to be demolished, as well as the Stella Middle Charter Academy and Bright Star Secondary Charter Academy. Additionally, the southern portion of the Manchester Square area would be utilized for construction staging and parking. The closest noise-sensitive receptors to this construction area are hotels, Travelodge Hotel (RP11), located along Aviation Boulevard approximately 50 feet south, and the Westin Hotel, La Quinta Inn, and Holiday Inn (RP14), located along W. Century Boulevard approximately 100 feet south, 50 feet south, and 50 feet south, respectively, from the closest point of construction-related activities.

Based on existing ambient noise level of 64.7 dB(A) CNEL in the area of the Travelodge Hotel, and 62.7 dB(A) CNEL in the area of the Westin, La Quinta Inn, and Holiday Inn hotels (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet and 830 feet, respectively. Noise sensitive uses with existing ambient noise of 64.7 dB(A) CNEL and 62.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less and 830 feet or less, respectively. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptors is less than 610 feet and 830 feet, respectively, construction equipment noise impacts on sensitive receptors from construction activities for the southern portion of Manchester Square would be significant because construction activities would exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

ITF East

Construction-related activities for the ITF East would include demolition, utility relocation, and structure. The closest noise-sensitive receptors to this construction area are hotels, Travelodge Hotel (RP11), located along Aviation Boulevard approximately 200 feet south from the closest point of construction-related activities.

Based on existing ambient noise level of 64.7 dB(A) CNEL in the area of the hotels (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet. Noise sensitive uses over the existing ambient noise of 64.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptors is less than 610 feet, construction equipment noise impacts on sensitive receptors from construction activities for the ITF East would be significant because construction activities would exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

CONRAC and Associated Roadways

Construction-related activities would include grading, foundations, structure, and finishes. The closest noise-sensitive receptors to this construction area are hotels, Travelodge Hotel (RP11), located along Aviation Boulevard approximately 600 feet southwest, and the Westin Hotel, La Quinta Inn, and Holiday Inn (RP14), located along W. Century Boulevard approximately 700 feet south, 650 feet south, and 500 feet south, respectively, from the closest point of construction-related activities.

Based on existing ambient noise levels of 64.7 dB(A) CNEL in the area of the Travelodge Hotel, and 62.7 dB(A) CNEL in the area of the Westin, La Quinta Inn, and Holiday Inn hotels (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet and 830 feet, respectively. Noise sensitive uses with existing ambient noise of 64.7 dB(A) CNEL and 62.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less and 830 feet or less, respectively. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptors (Holiday Inn – RP 14) is less than 610 feet and 830 feet, respectively, construction equipment noise impacts on sensitive receptors from construction activities for the CONRAC and associated roadways would be significant because construction activities would exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

New Roadways

'A' STREET

Construction-related activities for the new 'A' street from W. 96th Street to Century Boulevard would include excavation, utility relocation, storm drain structures, base stone, bituminous surface, pavement marking, seeding and mulching, concrete, and electrical work. The closest noise-sensitive receptor to this construction area is a hotel, Courtyard Marriott (RP2), located along W. 98th Street approximately 710 feet south from the closest point of construction-related activities.

Based on the existing ambient noise level of 77.4 dB(A) CNEL in the area of the Courtyard Marriott Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 185 feet. Noise sensitive uses with existing ambient noise of 77.4 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 185 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 185 feet, construction equipment noise impacts on sensitive receptors from construction activities for the new 'A' Street would be less than significant because construction activities would not exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

'B' STREET

The new 'B' Street would provide a connection between the new 'A' Street and Airport Boulevard and circulation around the ITF West. This roadway would be parallel to Westchester Parkway. The closest noise-sensitive receptor to this construction area are the residences along Westchester Parkway (RT4) approximately 1,100 feet from the closest point of construction-related activities.

Based on the existing ambient noise level of 72.2 dB(A) Leq in the area of Sepulveda Boulevard and Manchester Boulevard (refer to Table 4.9.2-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over existing ambient noise level would be approximately 190 feet. Noise sensitive uses with existing ambient noise of 72.2 dB(A) Leq would be significantly impacted if construction activity occurred within a distance of 190 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 190 feet, construction equipment noise impacts on sensitive receptors from construction for the new 'B' Street would be less than significant because construction activities would not exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

W. 96TH STREET

The existing 1,700 feet of W. 96th Street from just east of Vicksburg Avenue to Airport Boulevard would be closed and pavement would be demolished, including 96th Place. The closest noise-sensitive receptor to this construction area Courtyard Marriot (RP2) located at the corner of Vicksburg Avenue and W. 98th Street approximately 575 feet south from the closest point of construction-related activities.

Based on existing ambient noise levels of 77.4 dB(A) CNEL in the area of the Courtyard Marriot Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 185 feet. Noise sensitive uses with existing ambient noise of 77.4 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 185 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 185 feet, construction equipment noise impacts on sensitive receptors from construction activities for the W. 96th Street closure and demolition would be less than significant because construction activities would not exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

'D' STREET

The new 'D' Street is proposed between W. 96th Street and W. Arbor Vitae Street to provide access to existing industrial properties and to the proposed APM MSF. The closest noise-sensitive receptor to this construction area are the Four Points Sheraton and the Renaissance Hotel (RP5) located along Airport Boulevard approximately 75 feet west from the closest point of construction-related activities.

Based on the existing ambient noise level of 71.7 dB(A) CNEL in the area of the Renaissance Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 210 feet. Noise sensitive uses with existing ambient noise of 71.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 210 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 210 feet, construction equipment noise impacts on sensitive receptors from construction activities of the new 'D' would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

W. ARVOR VITAE STREET

The 2,000 feet of W. Arbor Vitae Street between Aviation Boulevard and S. La Cienega Boulevard would be widened to accommodate an additional lane in each direction. The closest noise-sensitive uses to the W. Arbor Vitae street improvements area are the commercial office north of W. Arbor Vitae approximately 60 feet north from construction related activities.

Based on the existing ambient noise level of 69.8 dB(A) CNEL in the area of these uses (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 280 feet. Noise sensitive uses with existing ambient noise of 69.9 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 275 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 275 feet, construction equipment noise impacts on sensitive receptors from construction activities of the W. Arbor Vitae Street Improvements would be significant because construction activities would exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

AVIATION BOULEVARD

The existing 2,800-foot portion of Aviation Boulevard between W. Century Boulevard and W. Arbor Vitae Street would be widened in order to provide an additional lane in each direction, resulting in improved circulation and traffic flow in and around the ITF East and CONRAC. The closest noise-sensitive receptors to this construction area is the Travelodge Hotel (RP11), located along Aviation Boulevard approximately 125 feet east from the closest point of construction-related activities.

Based on existing ambient noise levels of 64.7 dB(A) CNEL in the area of the Travelodge Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet. Noise sensitive uses with existing ambient noise of 64.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 610 feet, construction equipment noise impacts on sensitive receptors from construction activities for the Aviation Boulevard improvements would be significant because construction activities would exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

S. LA CIENEGA BOULEVARD

The existing 1,700-foot portion of S. La Cienega Boulevard between W. 98th Street and W. Arbor Vitae Street would be widened in order to provide an additional lane in each direction. The closest noise-sensitive receptors to this construction area are commercial uses (near RP13) approximately 50 feet east from the closest point of construction-related activities.

Based on existing ambient noise level of 64.4 dB(A) CNEL in the area of these uses (refer to Table 4.9.3-3), the distance at which construction equipment would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 740 feet. Noise sensitive uses with existing ambient noise of 64.4 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 740 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 740 feet, construction equipment noise impacts on sensitive receptors from construction activities of the S. La Cienega Boulevard improvements would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

W. 98TH STREET SEGMENT

Located on the south side of the ITF East and CONRAC facilities, parallel to W. Century Boulevard, from Aviation Boulevard to S. La Cienega Boulevard, this new roadway would be widened to better accommodate traffic traveling to the CONRAC. The closest noise-sensitive use to this construction area is the Travelodge

Hotel (RP11), located along Aviation Boulevard approximately 315 feet east from the closest point of construction-related activities.

Based on existing ambient noise level of 64.7 dB(A) CNEL in the area of the Travelodge Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet. Noise sensitive uses with existing ambient noise of 64.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptors is less than 610 feet construction equipment noise impacts on sensitive receptors from construction activities for the W. 98th Street segment would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

CONCOURSE WAY

Concourse Way would be a new 2,000-foot north-south, two-way roadway connecting W. Century Boulevard and W. Arbor Vitae Street. The closest noise-sensitive use to this construction area is the Travelodge Hotel (RP11), located along Aviation Boulevard approximately 700 feet west from the closest point of construction-related activities.

Based on existing ambient noise level of 64.7 dB(A) CNEL in the area of the Travelodge Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 610 feet. Noise sensitive uses over the existing ambient noise of 64.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 610 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptors is greater than 610 feet, construction noise impacts on sensitive receptors from construction activities for Concourse Way would be less than significant because construction activities would not exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

SOUTHBOUND S. SEPULVEDA BOULEVARD TO WORLD WAY

New ramps from southbound Sepulveda Boulevard would be constructed to both the arrivals and departures level to replace the existing Sky Way Bridge. The departures ramp would be approximately 1,000 feet in length and the arrivals ramp would be approximately 850 feet in length. The closest noise-sensitive receptor to this area is a hotel, Concourse Hotel (RP1), located on the corner of W. Century Boulevard and Sepulveda Boulevard approximately 50 feet to the west of closest point of construction-related activities for the new ramps.

Based on existing ambient noise level of 76.3 dB(A) CNEL in the area of the Concourse Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 100 feet. Noise sensitive uses in areas with existing ambient noise of 76.3 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of approximately 100 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 100 feet, construction equipment noise impacts on sensitive receptors from construction activities for the new ramps would be significant because construction activities would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

AIRPORT BOULEVARD

In order to improve traffic flow for the connection to the ITF West, the 1,800-foot portion of Airport Boulevard between W. Arbor Vitae Street and W. 98th Street would be widened on the west by up to 20 feet to accommodate an additional lane in each direction. The closest noise-sensitive receptor to this area is Four Points Sheraton and the Renaissance Hotel (RP5) located along Airport Boulevard approximately 75 feet west from the closest point of construction-related activities.

Based on the existing ambient noise level of 71.7 dB(A) CNEL in the area of the Renaissance Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 210 feet. Noise sensitive uses with existing ambient noise of 71.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 210 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 210 feet, construction equipment noise impacts on sensitive receptors from construction activities of the Airport Boulevard improvements would exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

W. 98TH STREET

The 1,800-foot section of W. 98th Street between the new 'A' Street and Airport Boulevard would be widened by approximately 15 feet to provide two lanes in each direction instead of the one lane in each direction that exists today. The closest noise-sensitive receptor to this construction area are the Four Points Sheraton and the Marriot (RP5) located on the corner of Airport Boulevard and W. 98th Street, approximately 75 feet north from the closest point of construction-related activities.

Based on the existing ambient noise level of 71.7 dB(A) CNEL in the area of the Marriot Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 210 feet. Noise sensitive uses with existing ambient noise of 71.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 210 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 210 feet, construction equipment noise impacts on sensitive receptors from construction activities of the W. 98th Street improvements would exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

W. CENTURY BOULEVARD

Improvements to W. Century Boulevard include an approximately 25-foot expansion on the south side of the roadway along a 4,000-foot segment between the new 'A' Street and Aviation Boulevard. The closest-noise sensitive receptor to this construction area are hotels, LAX Sheraton Gateway Hotel (RP2) and Travelodge Hotel (RP11), approximately 125 feet south and 300 feet west from the closest point of construction-related activities, respectively.

Based on the existing ambient noise level of 77.4 dB(A) CNEL in the area of the Sheraton Hotel and 64.7 dB(A) CNEL in the area of the Travelodge Hotel (refer to Table 4.9.3-3), the distance at which construction equipment would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 85 feet and 610 feet, respectively. Noise sensitive uses with existing ambient noise of 77.4 dB(A) CNEL and 64.7 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 85 feet or less and 610 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 85 feet, construction activities for the W. Century Boulevard improvements would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

S. LA CIENEGA BOULEVARD/I-405 ON- AND OFF-RAMPS

Improvements would include two additional lanes and signal modifications to relieve congestion backing up onto I-405. The closest noise-sensitive receptors to this construction area are commercial uses (near RP13) approximately 50 feet east from the closest point of construction-related activities.

Based on existing ambient noise level of 64.4 dB(A) CNEL in the area of these uses (refer to Table 4.9.3-3), the distance at which construction equipment would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 740 feet. Noise sensitive uses with existing ambient noise of 64.4 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of 740 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is less than 740 feet, construction equipment noise impacts on sensitive receptors from construction activities of the S. La Cienega Boulevard Off-Ramp Improvements would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

NEW ‘C’ STREET

The new ‘C’ street would provide two lanes in each direction and improve traffic flow at the intersection of Aviation Boulevard and Imperial Highway. The closest noise-sensitive receptors to this construction area are industrial uses and no noise sensitive use is located within 1,000 feet from this roadway improvement. Given the distance, construction equipment noise impacts on sensitive receptors from construction activities for the new ‘C’ Street would be less than significant because construction activities would not exceed ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

Phase 2 Activities

Phase 2 activities would begin in approximately 2025 and be completed by approximately 2035. The second phase of construction would mainly include the remaining roadway improvements.

Major roadway improvements constructed during the second phase of the Project would include:

- S. Sepulveda Boulevard (LAX Airport Tunnel to W. 96th Street)
- Northbound S. Sepulveda Boulevard to eastbound W. Century Boulevard Ramp
- Westbound W. Century Boulevard (New ‘A’ Street to World Way)
- Westbound W. Century Boulevard Viaduct to World Way

- Eastbound World Way (Arrivals) to southbound S. Sepulveda Boulevard Ramp
- Eastbound World Way (Departures) to southbound S. Sepulveda Boulevard Ramp (join existing ramp)
- Eastbound World Way (Arrivals & Departures) to eastbound W. Century Boulevard and to northbound New 'A' Street
- Eastbound World Way (Departures) to northbound S. Sepulveda Boulevard Ramp

These construction activities all include improvements along Sepulveda Boulevard in the vicinity of the intersection with Century Boulevard. The closest noise-sensitive receptor to this construction area is the Concourse Hotel (RP1), on the corner of W. Century Boulevard and Sepulveda Boulevard approximately 75 feet to the east from the closest point of construction activity.

Based on the existing ambient noise level of 76.3 dB(A) CNEL in the area of the Concourse Hotel (refer to Table 4.9.3-3), the distance at which construction equipment noise would result in a 5 dB(A) increase over the existing ambient noise level would be approximately 100 feet. Noise sensitive uses in areas with existing ambient noise of 76.3 dB(A) CNEL would be significantly impacted if construction activity occurred within a distance of approximately 100 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would further reduce noise. Given the distance to the closest sensitive receptor is greater than 100 feet, construction equipment noise impacts on sensitive receptors from construction activities during Phase 2 activities along Sepulveda Boulevard would be significant because construction activities would exceed the ambient exterior noise level by 5 dB(A) at a noise-sensitive use.

Construction Equipment Vibration

Construction vibration is a localized event and is typically only perceptible to a receptor that is close to the vibration source. As mentioned previously, the closest sensitive receptors to any construction area are hotels, Travelodge Hotel, located along Aviation Boulevard approximately 50 feet south, and the Westin Hotel, La Quinta Inn, and Holiday Inn, located along W. Century Boulevard approximately 100 feet south, 50 feet south, and 50 feet south, respectively, from the closest point of construction-related activities

At 50 feet, construction vibration levels associated with various construction equipment, as shown in **Table 4.9.3-8**, would not exceed the FTA criteria of 0.2 inches per second for non-engineered timber and masonry buildings (typical of residential buildings and institutional buildings). The most substantial vibration would be from large bulldozers operating within 50 feet and would result in vibrations levels (PPV) of 0.031 inches per second; all other equipment is estimated to have less effect. As such, construction equipment vibration impacts would be less than significant.

Table 4.9.3-8: Vibration Velocities for Construction Equipment

EQUIPMENT	PPV AT 25 FEET (in/sec)	PPV AT 50 FEET (in/sec)	PPV AT 75 FEET (in/sec)	PPV AT 100 FEET (in/sec)
Backhoe	0.040	0.014	0.008	0.005
Compactor	0.050	0.018	0.010	0.006
Concrete Mixer	0.040	0.014	0.008	0.005
Crane	0.057	0.020	0.011	0.007
Generator	0.018	0.006	0.003	0.002
Excavator	0.040	0.014	0.008	0.005
Large Bulldozer	0.089	0.031	0.017	0.011
Loaded Trucks	0.076	0.027	0.015	0.010
Water Trucks	0.076	0.027	0.015	0.010
Loader	0.071	0.025	0.014	0.009
Paver	0.063	0.022	0.012	0.008
Pump	0.014	0.005	0.003	0.002
Scraper	0.057	0.020	0.011	0.007

NOTE: Non-engineered timber and masonry buildings can be exposed to ground-borne vibration levels of 0.2 inches per second without experiencing structural damage.

SOURCE: U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

LAX Landside Access Modernization Program Potential Future Related Development

Construction Traffic Noise

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development. Overall, the daily transportation of construction workers and the hauling of materials would cause increases in noise levels along study area roadways. As mentioned above, a doubling of sound energy results in a 3 dB(A) increase, which means that a doubling of sound wave energy (e.g., doubling the volume of traffic on a roadway) would result in a barely perceptible change in sound level. Similar to the proposed Project, construction routes would be designated for freeways and major arterials, avoiding minor arterials and local streets. The total trip generation would be below the existing traffic volumes on the freeways and major arterial streets around the Airport. Construction-related traffic would not result in a doubling or tripling of existing traffic volumes on streets around the Airport. As such, impacts related to construction traffic noise of the potential future related development would be less than significant because noise increases would be less than 3 dB(A) $L_{eq(h)}$.

Construction Equipment Noise

As mentioned previously, there are no specific plans for development of these parcels at this time. Because portions of the areas that would be available for potential future related development are located adjacent to existing hotels (i.e., the Manchester Square staging areas), the potential exists for construction to occur in close proximity to existing hotels and for construction noise to exceed significance thresholds. Thus, impacts related to construction equipment noise of the potential future related development would be significant.

Construction Equipment Vibration

As mentioned previously, the closest sensitive receptor to any construction area are hotels, Travelodge Hotel, located along Aviation Boulevard approximately 50 feet south, and the Westin Hotel, La Quinta Inn, and Holiday Inn, located along W. Century Boulevard approximately 100 feet south, 50 feet south, and 50 feet south, respectively, from the closest point of construction-related activities. These hotels are located adjacent to the Manchester Square construction laydown and staging area, which has been identified as being available for potential future related development once the Project is completed.

At 50 feet, construction vibration levels associated with various construction equipment, as shown in Table 4.9.3-8, would not exceed the FTA criteria of 0.2 inches per second for non-engineered timber and masonry buildings (typical of residential buildings and institutional buildings). The most substantial vibration would be from large bulldozers operating within 50 feet and would result in vibrations levels (PPV) of 0.031 inches per second; all other equipment is estimated to have less effect. As such, construction equipment vibration impacts would be less than significant.

4.9.3.6 Cumulative Impacts

Construction Traffic Noise

Future projects such as the Metro Crenshaw/LAX Transit Corridor Project and the Metro's proposed Airport Metro Connector 96th Street Transit Station Project (Metro AMC Station) would occur simultaneously and exacerbate construction traffic-related noise at nearby sensitive receptors within the Project area. Construction of the Metro AMC Station is scheduled between 2020 and 2023, during proposed Project Phase 1 construction.[21] The combination of these projects could result in increased traffic on specific roadways within the Project vicinity, and cumulative noise impacts would be significant where noise increases would exceed 3 dB(A) $L_{eq(h)}$. Regarding increases in road traffic associated with regional growth and cumulative development forecasted to occur by 2024 and 2035, refer to Section 4.12.3, *Construction Surface Transportation*. Similar to the proposed Project, the Metro Crenshaw/LAX Transit Corridor and Metro AMC Station would likely designate construction routes to freeway and major arterials, avoiding minor arterials. Cumulative construction-related traffic would not result in a doubling or tripling of existing traffic volumes. As such, cumulative construction traffic noise would be less than significant because noise increases would be less than 3 dB(A) $L_{eq(h)}$.

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[21] Los Angeles County Metropolitan Transportation Authority (Metro), *Airport Metro Connector 96th Street Transit Station Draft Environmental Impact Report*, June 2016.

Construction Equipment Noise

As a result of the proposed Project's increase in noise levels at certain nearby noise-sensitive receptors, construction noise impacts would be significant. When construction of the proposed Project and other future projects such as the Metro Crenshaw/LAX Transit Corridor and Metro AMC Station occurs simultaneously, construction noise experienced by noise-sensitive receptors at areas near the two projects could be exacerbated. Therefore, cumulative construction equipment noise impacts would be significant and the contribution of the proposed Project to these impacts would be cumulatively considerable.

Construction Equipment Vibration

Ground-borne vibration decreases rapidly with increase in distance. Vibration impacts due to construction activities are generally limited to building/structures that are located close to the construction site, within 100 feet from heavy construction equipment. The nearest cumulative project, the Metro Crenshaw/LAX Transit Corridor would be approximately 150 feet from the Project site. Therefore, cumulative construction equipment vibration impacts associated with concurrent on-site construction activities from development of the Project and the cumulative projects would be less than significant.

4.9.3.7 Mitigation Measures

As indicated in Section 4.9.3.5, construction equipment noise impacts would be significant. The following Standard Control Measure is proposed as a mitigation measure to reduce significant construction equipment noise.

- **LAX-N-1. Construction-Related Noise Control.** The following measures shall be implemented to reduce construction-related noise impacts associated with the LAX Landside Access Modernization Program:

  1a. Construction Noise Control

  - For all projects near noise-sensitive uses, noise control devices shall be used and maintained, such as equipment mufflers, enclosures, and barriers. Natural and artificial barriers, such as ground elevation changes and existing buildings, may be used to shield construction noise from noise-sensitive uses.
  - Stationary source equipment that is flexible with regard to relocation (such as generators and compressors) shall be located at the greatest distance practical from sensitive land uses, and unnecessary idling[22] of equipment shall be prohibited.

  1b. Construction Staging

  - Construction operations shall be staged as far from noise-sensitive uses as feasible.
  - Loading and unloading of heavy construction materials shall be located on-site and away from noise-sensitive uses, to the extent feasible.

[22] All nonessential idling of construction equipment shall be restricted to five minutes or less in California Air Resources Board Rule 2449.

1c. Equipment Replacement

- Use "quiet-design" air compressors and other stationary noise sources when such technology/equipment is commercially available.

1d. Construction Scheduling

- The timing and/or sequence of the noisiest on-site construction activities shall avoid sensitive times of the day, as feasible (9 p.m. to 7 a.m. Monday - Friday; 6 p.m. to 8 a.m. Saturday; anytime on Sunday or Holidays).

In addition to Standard Control Measure (Mitigation Measure) LAX-N-1, the following mitigation measure is also proposed to reduce significant construction equipment noise.

- **MM-N (LAMP)-1. Noise Curtains.** LAWA shall require construction contractors to use noise curtains during construction to shield nearby sensitive receptors from construction equipment-related noise when an increase of 5 dB(A) is projected to occur over the baseline exterior level. To verify efficiency of the noise curtains, LAWA will measure construction noise levels at the closest sensitive receptors in compliance with City of Los Angeles standards. If noise levels exceed the 5 dB(A) increase, LAWA will implement additional technological solutions and installation equipment and will repeat measuring construction noise levels, until an increase of 5 dB(A) does not occur.

4.9.3.8 Level of Significance after Mitigation

With implementation of Standard Control Measure (Mitigation Measure) LAX-N-1 and Mitigation Measure MM-N (LAMP)-1, significant Project-related construction equipment noise impacts would be reduced to a level that would be less than significant, and the Project's incremental contribution to significant construction equipment noise impacts would be less than cumulatively considerable, because construction activities would not exceed ambient exterior noise levels by 5 dB(A) at a noise-sensitive use.

4.9.4 TRANSIT NOISE AND VIBRATION

4.9.4.1 Introduction

This section addresses noise and vibration impacts associated with operation of transit systems included in the proposed Project, specifically, the APM and associated components. At the present conceptual level of planning, the exact design of the APM system is not known. For analysis purposes, it is assumed that the APM system would either utilize rubber-tire vehicles operating along a fixed guideway or steel-wheel vehicles operating along welded track with resiliently supported ties.

Transit Noise

Noise from operation of an APM is generated primarily from electric control systems and traction (electric) motors, gear systems, wind shear, and contact between wheels and the guideway. While train horns and crossing notification systems can also be typical noise sources for APM/light rail systems, this would not be a concern relative to the proposed Project, since the proposed APM system would be grade-separated with no vehicle or pedestrian crossings along the routes. Thus, no train horns or crossing notification systems would be present as part of normal APM operations.

Transit Vibration

Vibration caused by trains is the result of wheels rolling on the rails or guideway. This energy is then transmitted through the track support system into the transit structure, through the ground, to the foundations of nearby buildings, and finally throughout the remainder of the building structure. The level of vibration received at the building is a function of the type of trains, their speeds, track system, structure, support and condition, distance from the tracks, geological conditions, and the receiving structure. Ground-borne vibration does not typically annoy people who are outdoors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads.

4.9.4.2 Methodology

Transit Noise

Appendix M provides details about the transit noise impact assessment methodology. Ambient noise monitoring was undertaken to establish existing noise levels at various locations in the proximity of the proposed Project. The monitoring was conducted to provide data on ambient noise generated by traffic and operation of current establishments in the area surrounding LAX. The locations selected were either noise-sensitive land uses (residences and hotels) or buildings that were close to where the components of the proposed Project would be constructed and operate in the future. Fifteen noise-sensitive receptor locations were established, as shown in Figure 4.9.3-1 and identified in Table 4.9.3-1.

Operational noise levels of the proposed Project were calculated with the computer noise model SoundPLAN, which generates computer simulations of noise propagation from sources such as rail noise. Rail noise emissions were modelled according to the industry standard rail noise prediction methodologies adopted by the Federal Railroad Administration (FRA). The FRA noise prediction model calculates an A-weighted noise level at a receiver location through direct propagation or taking into account shielding provided by barriers.

The terrain for the Project site is relatively flat and the top-of-rail elevation ranges from 70 feet above grade within the CTA to 40 feet above grade near the ITF West and APM Maintenance and Storage Facility (MSF). Rail noise was assessed assuming a maximum speed of 45 miles per hour.

Transit Vibration

Appendix M provides details about the transit vibration impact assessment methodology. The basic approach for a General Vibration Assessment is to define a curve, or set of curves, that predicts the overall ground-surface vibration as a function of distance from the source, apply adjustment to those vibration curves to account for site- or system-specific factors such as speed and system design, and estimate the vibration levels for uses located along the transit corridor.[23] **Figure 4.9.4-1** presents the generalized ground surface vibration curves at representative North American transit systems. The top curve applies to trains that are powered by diesel or electric locomotives, which includes intercity passenger trains and commuter rail trains. The curve for rapid transit rail cars covers both heavy and light-rail vehicles on at-grade and subway tracks.

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[23] U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

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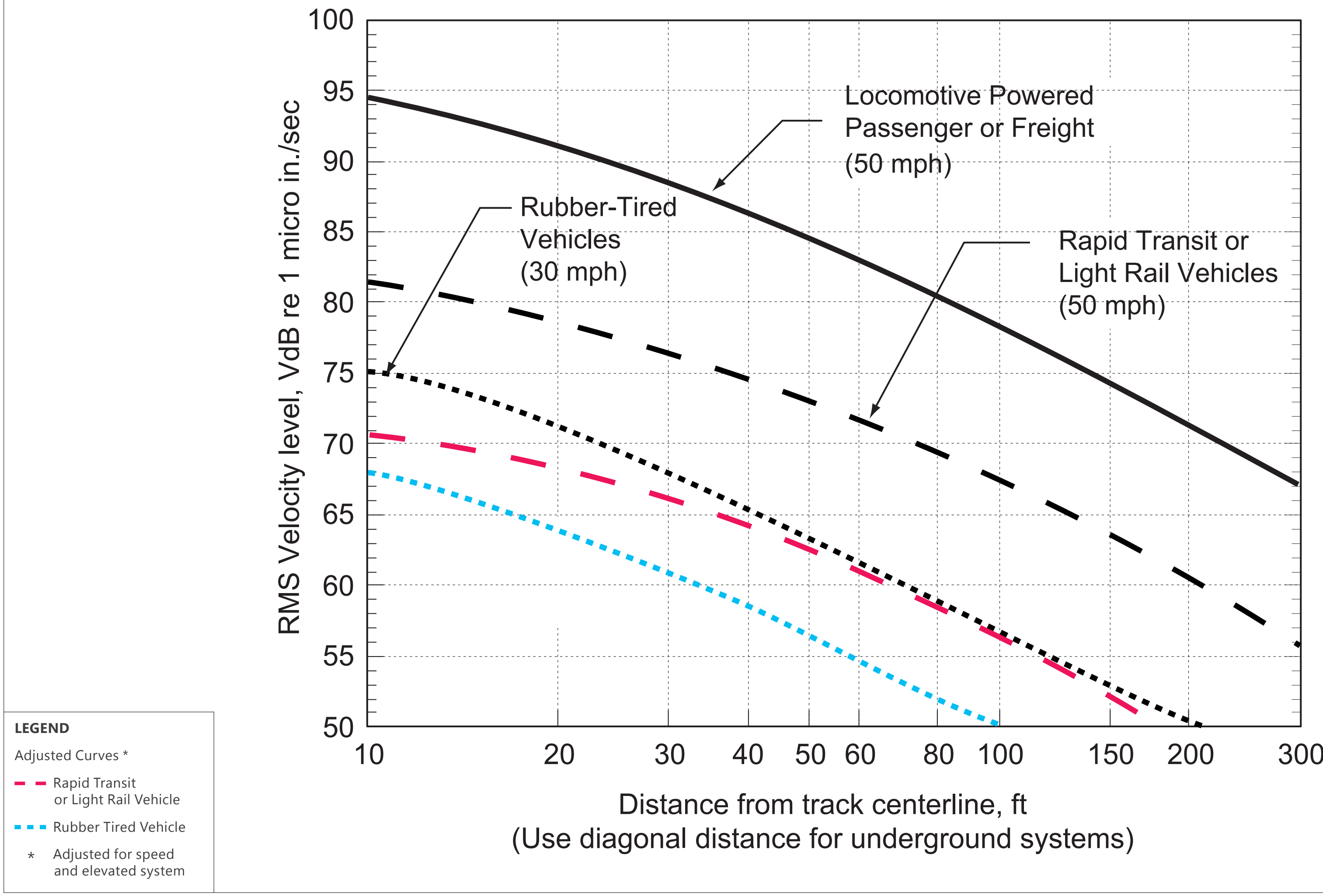

SOURCE: Department of Transportation, Transit Noise and Vibration Impact Assessment (May 2006).
PREPARED BY: Meridian Consultants, LLC, August 2015.

FIGURE 4.9.4-1

Generalized Ground Service Vibration Curves

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In estimating the transit vibration levels associated with the proposed Project, all three vibration curves were used for the APM systems. Based on adjustment factors presented in the 2006 FTA *Transit Noise and Vibration Impact Assessment*[24] manual, each base curve was reduced by 10 dB to account for the design of the APM systems to operate on an elevated structure. Speed adjustments were also made, with 0.9 dB being subtracted to the vibration curve for rapid transit or light rail vehicles to reduce the default speed of 50 mph to 45 mph, and 3.5 dB was added to rubber-tired vehicles to increase the default speed of 30 mph to 45 mph.

4.9.4.3 Existing Conditions

Ambient Noise

As discussed in Section 4.9.3.2, a total of 15 locations within the Project area were monitored to establish existing noise conditions along the route of the APM system. The data presented in Table 4.9.3-6 was used to assess noise impacts from operation of the APM transit system. A detailed discussion of the noise measurement methodology is provided in Appendix M.

Ground-borne Vibration

As discussed in Section 4.9.3.3, ambient vibration levels were recorded at 15 locations in the Project area. The primary focus of the vibration survey was to determine existing vibration levels at the land uses most susceptible to vibration impacts from transit operations. A detailed discussion of the vibration measurement methodology is provided in Appendix M. Existing ground-borne vibration levels are attributed to road traffic and normal operations of establishments in the Project area. The data presented in Table 4.9.3-7 were used to assess vibration impacts from operation of the APM transit system.

4.9.4.4 Thresholds of Significance

Transit Noise

A significant transit noise impact would occur if the proposed Project would result in one or more of the following conditions:

- Transit operations associated with components of the proposed Project cause the ambient noise level measured at the property line of affected uses to increase by 3 dB(A) CNEL if post-Project noise levels are within the "normally unacceptable" or "clearly unacceptable" compatibility category.
- Transit operations associated with components of the proposed Project cause the ambient noise level measured at the property line of affected uses to increase by 5 dB(A) CNEL or greater regardless of compatibility category.

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[24] U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

The above thresholds are derived from the *L.A. CEQA Thresholds Guide*[25] relative to railroad noise associated with a proposed project.

Transit Vibration

A significant transit vibration impact would occur if the proposed Project would result in one or more of the following conditions:

- Vibration or ground-borne noise levels exceed the FTA-recommended maximum acceptable level threshold of 72 VdB for residences and buildings where people normally sleep, including hotels.
- Vibration levels exceed approximately 80 VdB at residential land uses for infrequent events and 72 VdB for frequent events.

The above thresholds are derived from the 2006 FTA *Transit Noise and Vibration Impact Assessment*[26] manual.

4.9.4.5 Impact Analysis

LAX Landside Access Modernization Program Project

Transit Noise

Table 4.9.4-1 provides the predicted noise levels of the proposed APM guideway at the specified sensitive receptors. As mentioned above, sensitive receptors RP6 through RP14 would be acquired by LAWA and demolished prior to Project implementation. Therefore, further analysis for these sensitive receptors was not necessary.

As shown in Table 4.9.4-1, predicted noise levels associated with APM operations would result in an increase ranging from a low of 0.0 dBA at RP15 to a high of 0.6 dBA at RP2. It is important to note existing ambient conditions exceed acceptable levels at the two specified hotels (Courtyard by Marriott and the Four Points Sheraton) and would result in a 0.1 dBA increase at RP5 from the proposed APM guideway. The results of the predictive modeling process are shown graphically in **Figure 4.9.4-2**. Transit operations associated with the proposed Project would not exceed the 3 dBA or more in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or the 5 dB(A) threshold over ambient conditions; transit noise impacts would therefore be less than significant.

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25 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

26 U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

[Draft]

Table 4.9.4-1: Transit Noise Levels

SENSITIVE RECEPTOR ID	EXISTING LAND USE	ADDRESS/ LOCATION	DISTANCE FROM APM GUIDEWAY (FEET)	MEASURED 24-HR CNEL (DBA)	PROPOSED APM SOUND LEVELS (LDN 24-HOUR)	FUTURE AMBIENT PLUS PROPOSED APM GUIDEWAY(DBA)	CALCULATED INCREASE IN NOISE (DB)
RP1	Concourse Hotel	6225 W. Century Boulevard, Los Angeles	1,180	76.3[1/]	60.2	76.4	0.1
RP2	LAX Sheraton Gateway Hotel	6107 W. 98th Street, Los Angeles	100	72.4	64.2	73.0	0.6
RP3	LAX Sheraton Gateway Hotel	6101 W. Century Boulevard, Los Angeles	100	77.4	66.3	77.7	0.3
RP4	Office Building	6052 W. 98th Street, Los Angeles	760	75.9	62.0	76.1	0.2
RP5	Four Points Sheraton Hotel	9750 Airport Boulevard, Los Angeles	115	71.7	52.9	71.8	0.1
RP15	Residential Development	700 W. Arbor Vitae Street, Los Angeles	2,300	69.8	44.9	69.8	0.0

NOTES:

RP9 through RP14 are located within Manchester Square and would be removed due to development of the CONRAC and the ITF East. RP6 through RP8 would be removed due to development of the APM MSF.

1/ Two peak-hour measurements at the Concourse Hotel were supplemented due to technical complications with the 24-hour measurement. The higher of the two peak-hour measurements at the Concourse Hotel was 76.3 dBA.

SOURCE: Meridian Consultants, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

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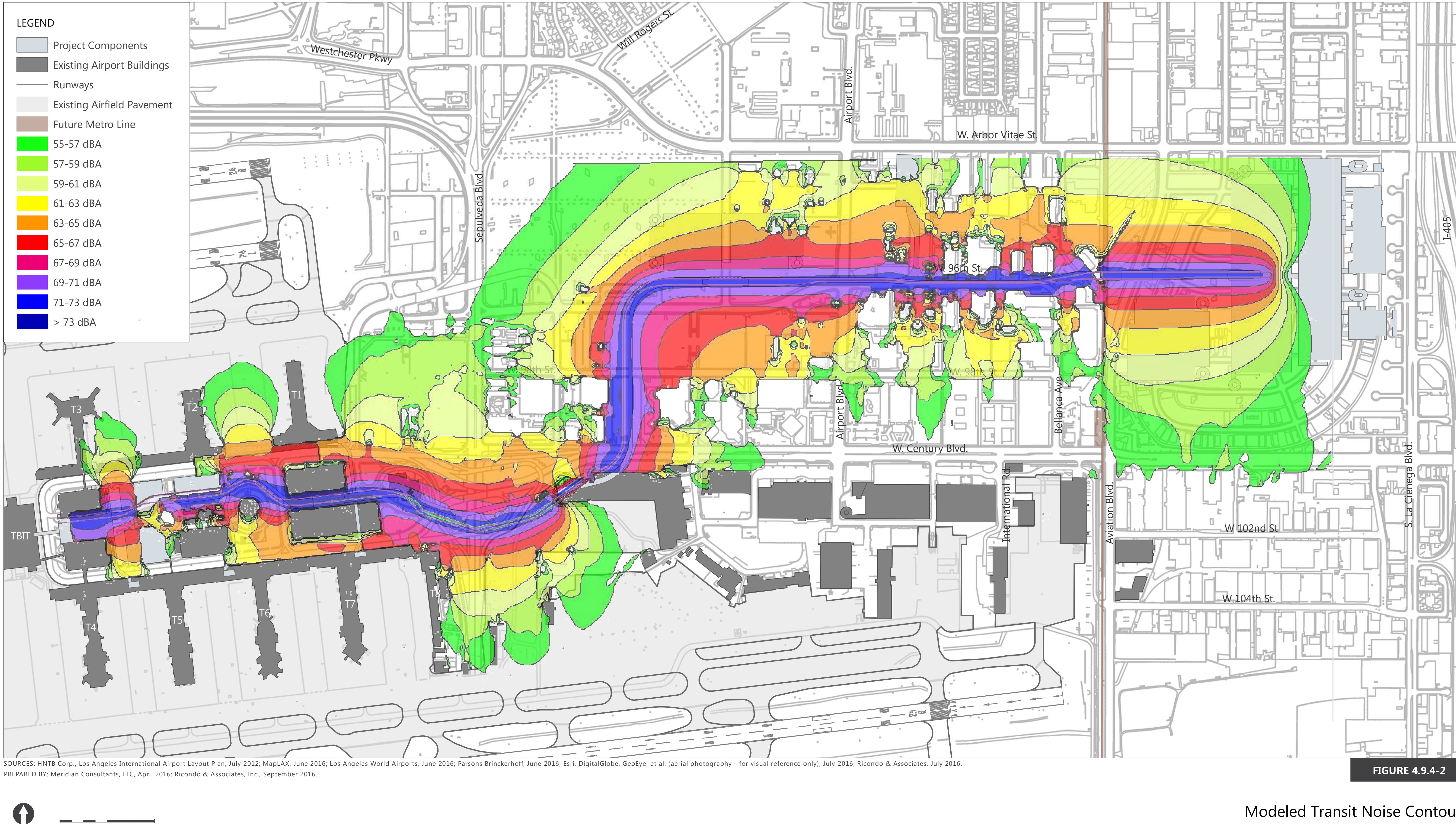

SOURCES: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; Los Angeles World Airports, June 2016; Parsons Brinckerhoff, June 2016; Esri, DigitalGlobe, GeoEye, et al. (aerial photography - for visual reference only), July 2016; Ricondo & Associates, July 2016.
PREPARED BY: Meridian Consultants, LLC, April 2016; Ricondo & Associates, Inc., September 2016.

FIGURE 4.9.4-2

Modeled Transit Noise Contours

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Transit Vibration

The type and condition of the rails, the type of guideway, the rail support system, and the mass and stiffness of the guideway structure would all have an influence on the level of ground-borne vibration. Jointed rail, worn rail, and wheel impacts at special track work can all cause substantial increases in ground-borne vibration. It is rare for ground-borne vibration to be a problem with elevated railways except when guideway supports are located within 50 feet of buildings.[27] For rubber-tired systems, the smoothness of the roadway/guideway is the critical factor; if the surface is smooth, vibration problems are unlikely.

The hotel nearest to the APM route along W. 96th Street (RV5 – Renaissance Hotel) would be approximately 45 feet from the APM centerline. Based on the adjusted vibration level curve, the estimated ground-borne vibration levels would be approximately 63.1 VdB for rapid transit or light rail vehicles and 57.5 VdB for rubber-tired vehicles.

The other hotel nearest to the APM route on the corner of Airport Boulevard and W. 98th Street (RV6 – Four Points Sheraton) would be approximately 115 feet from the APM centerline. Based on the adjusted vibration level curve, the estimated ground-borne vibration levels would be approximately 56.1 VdB for rapid transit or light rail vehicles and 49.5 VdB for rubber-tired vehicles. Consequently, the maximum vibration level for both these receptors would be below the FTA-recommended maximum acceptable level threshold of 72 VdB.

Based on the above analysis, transit-related ground-borne vibration for rapid transit or light rail vehicles and rubber-tired vehicles would be less than significant because maximum vibration levels would be less than 72 VdB.

LAX Landside Access Modernization Program Potential Future Related Development

Transit Noise

After construction of the proposed Project, parcels that were needed for construction laydown and staging areas may be subject to potential future development. While there are no specific plans for development of these parcels at this time, when development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. No additional transit noise would be generated by the potential future related development; thus impacts would be less than significant.

Transit Vibration

As mentioned previously, there are no specific plans for development of these parcels at this time. No additional transit vibration would be generated by the potential future related development; as such, impacts related to transit vibration of the potential future related development would be less than significant.

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[27] U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

4.9.4.6 Cumulative Impacts

Transit Noise

The approved Metro Crenshaw/LAX Transit Corridor will extend approximately 8.5 miles south from the existing Metro Exposition Line at Crenshaw Boulevard and Exposition Boulevard. Two stations are being constructed in proximity to LAX, one near the intersection of Century Boulevard and Aviation Boulevard, and another proposed station at 96th Street and Aviation Boulevard, the Metro AMC.

Within the vicinity of the Project area, the alignment of the proposed Metro Crenshaw/LAX light rail line would extend along the west side of Aviation Boulevard north of Century Boulevard. The operational noise level associated with the system near Century Boulevard and Aviation Boulevard would be 60 dB(A) Ldn at a distance of 123 feet from the rail network.[28] Relative to the transit-related noise-sensitive receptors within the Project area, sensitive receptors along W. 96th Street (RP7 – Residential Development) and along W. 98th Street (RP8 – Residential Development) would be the nearest to the future Metro Crenshaw/LAX Transit Corridor, both at a distance of approximately 425 feet. Based on a sound drop-off rate of 4.5 dB per doubling of distance, the Metro Crenshaw/LAX Transit Corridor noise would dissipate to 51.9 dB at sensitive receptors RP7 and RP8. Combined with the ambient environment and noise generated from the APM, noise levels at sensitive receptors RP7 and RP8 would not result in an appreciable increase from the Metro Crenshaw/LAX Transit Corridor because noise levels would remain at 74.5 dB(A) and 72.5 dB(A), respectively. It is also important to note that these receptors would be acquired by LAWA and demolished prior to Project implementation. Therefore, cumulative transit noise impacts would be less than significant.

Transit Vibration

Given the intervening distance, ground-borne vibration impacts to sensitive receptors from the Metro Crenshaw/LAX Transit Corridor would not combine with vibration from the APM guideway. The sensitive receptor nearest to the Metro Crenshaw/LAX Transit Corridor are commercial development (RV11) at 5730 W. 98th Street and would be approximately 700 feet away. As such, there would be no significant cumulative transit vibration impacts from the combination of the Metro Crenshaw/LAX Transit Corridor and the proposed Project's APM guideway.

4.9.4.7 Mitigation Measures

As indicated in Section 4.9.4.5, transit noise and vibration impacts would be less than significant; therefore, no mitigation measures are required.

4.9.4.8 Level of Significance after Mitigation

Transit Noise

Noise impacts from transit from the implementation of the proposed Project would be less than significant.

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[28] Los Angeles County Metropolitan Transportation Authority (Metro), *Crenshaw/LAX Transit Corridor Project Final Environmental Impact Statement/Final Environmental Impact Report,* August 2011.

Transit Vibration

Vibration impacts from transit from the implementation of the proposed Project would be less than significant.

4.9.5 COMBINED CUMULATIVE IMPACTS

As discussed in Sections 4.9.2 through 4.9.4, implementation of the Project would result in changes to existing road traffic noise, and the generation of construction-related noise and transit noise and vibration. **Table 4.9.5-1** presents the combined road traffic noise for cumulative conditions at the six noise-sensitive receptors that would still exist at the start of project construction. Figure 4.9.3-1 delineates the locations of these noise-sensitive receptors. In addition to the road traffic noise levels, the addition of transit noise is included in the cumulative noise level estimates. The locations addressed in the cumulative noise impacts evaluations are representative of the surrounding noise-sensitive uses and are considered conservative given their proximity to the Project site.

Based on the preceding impact analyses, the largest contributor to combined cumulative noise impacts is construction equipment noise. As indicated in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration,* construction equipment noise impacts would be significant; however mitigation measures would reduce these impacts to levels less than significant. Table 4.9.5-1 indicates that c combined implementation of the proposed Project components would have a cumulatively considerable contribution to significant cumulative noise impacts at four locations. Given the relative importance of construction equipment noise to combined noise impacts, however, implementing the construction equipment noise mitigation measures would likely reduce this contribution to less than cumulatively considerable levels.

Implementation of the Project is anticipated to occur between 2024 and 2035. It is likely that there would be some overlap in noise impacts from operation (including road traffic noise and transit noise) during construction between the 2024 and 2035 period. It would be speculative given lack of available details on construction scheduling to estimate timing, location, and combined noise levels of such overlapping activities in any greater detail .

Table 4.9.5-1: Combined Road Traffic, Construction, and Transit Noise

SENSITIVE RECEPTOR ID	EXISTING LAND USE	ADDRESS/ LOCATION	DISTANCE FROM CONSTRUCTION /APM GUIDEWAY (FEET)	MEASURED 24-HR CNEL (DBA)	ROADWAY NOISE LEVELS (DBA)	CONSTRUCTION NOISE (DBA)	PROPOSED APM SOUND LEVELS (DBA)	FUTURE AMBIENT PLUS ROADWAY, CONSTRUCTION, AND APM NOISE (DBA)	CALCULATED INCREASE IN NOISE (DBA)
RP1	Concourse Hotel	6225 W. Century Boulevard, Los Angeles	50	76.3 [1/]	77.8	86.0	60.2	87.0	10.7
RP2	LAX Sheraton Gateway Hotel	6107 W. 98th Street, Los Angeles	100	77.4	66.3	81.5	64.2	82.2	9.8
RP3	LAX Sheraton Gateway Hotel	6101 W. Century Boulevard, Los Angeles	100	72.4	66.3	81.5	66.3	83.1	5.7
RP4	Office Building	6052 W. 98th Street, Los Angeles	760	75.9	66.3	68.3	62.0	77.1	1.2
RP5	Four Points Sheraton Hotel	9750 Airport Boulevard, Los Angeles	75	71.7	66.3	83.4	52.9	83.8	12.1
RP15	Residential Development	700 W. Arbor Vitae Street, Los Angeles	2,300	69.8	68.1	61.1	44.9	72.4	2.6

NOTE:

1/ Two peak-hour measurements at the Concourse Hotel were supplemented due to technical complications with the 24-hour measurement. The higher of the two peak-hour measurements at the Concourse Hotel was 76.3 dBA.

SOURCE: Meridian Consultants, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

4.10 Population and Housing

4.10.1 INTRODUCTION

This section discusses potential impacts on population and housing as a result of implementation of the proposed Project within the proposed Project site and the Project vicinity. The Project vicinity includes portions of the City of Los Angeles and unincorporated County of Los Angeles, as well as nearby cities within surrounding Southern California Association of Governments (SCAG) subregions, including Culver City, the City of El Segundo, the City of Hawthorne, and the City of Inglewood. The proposed Project site is generally bound by the Tom Bradley International Terminal (TBIT) on the west, I-405 on the east, Westchester Parkway/W. Arbor Vitae Street on the north, and I-105 on the south. The analysis in the section assesses population and housing impacts in relation to adopted growth forecasts, policies, and programs, including the potential displacement of population or housing that would result from the proposed Project.

4.10.2 METHODOLOGY

4.10.2.1 Population and Housing Study Area

The geographic extents for the population and housing analysis (Population and Housing Study Area) includes the jurisdictions within or adjacent to the proposed Project site boundaries, as well as nearby cities within surrounding SCAG subregions, which could potentially be affected by the proposed Project (see **Figure 4.10-1**). As such, the jurisdictions assessed include the cities of Culver City, El Segundo, Hawthorne, and Inglewood; the Westchester–Playa del Rey Community Plan and the LAX Plan areas (City of Los Angeles); and the Los Angeles County unincorporated communities of Del Aire and Lennox.

Relevant population, housing, and employment data within the Project vicinity ("Population and Housing Study Area") was gathered from recently published sources, including the 2010 U.S. Census[1]; the California Department of Finance (DOF)[2]; the California Employment Development Department (EDD)[3]; the SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Growth Forecast[4], and the

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1 U.S. Department of Commerce, U.S. Census Bureau, "American Fact Finder," Available: http://factfinder2.census.gov, accessed September 2015.

2 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.

3 State of California Employment Development Department, "Labor Force and Unemployment Rate for Cities and Census Designated Places," Available: http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html.

4 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.

2012–2035 RTP/SCS Growth Forecast,[5] and general plan projections for each of the jurisdictions located within the Population and Housing Study Area.

Projected population, housing, and employment increases that would be caused by the proposed Project were compared to existing conditions of the Population and Housing Study Area and the significance thresholds to determine impacts. State, regional, and local growth projections were used to estimate projected population, housing, and employment within the Population and Housing Study Area for Phase 1 (2024) and Phase 2 (2035) of the proposed Project. As applicable, annual growth rates were interpolated to calculate population, housing, and employment projections for years 2024 and 2035.

Growth projections from state, regional, and local sources are presented to provide data within the Population and Housing Study Area.

4.10.2.2 Project Site

U.S. 2010 Census tract data was utilized to identify the existing population and housing characteristics within the Project site.[6] Census tracts are small, relatively permanent statistical subdivisions of a county or equivalent entity that generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people.[7] A Census tract typically covers a contiguous area and generally follows visible and identifiable features.[8] As such, population and housing data for year 2010 was collected for those tracts located within the Project site boundaries. Projected population and housing were compared to existing conditions of the Project site and significance thresholds to determine potential impacts.

In addition to residents living in single- and multi-family homes, portions of the proposed Project site are also populated by homeless residents. Estimated counts of the homeless population within the Project site were obtained from the Los Angeles Homeless Services Authority (LAHSA). LAHSA is an independent agency that coordinates the effective utilization of federal, state, and local funding for programs providing services to homeless persons in the City and County of Los Angeles.[9] The most recent homeless population survey was conducted by LAHSA in 2015 by individual U.S. Census tract. For the purposes of this analysis, the existing homeless population for year 2015 was estimated for the Belford and Manchester Square areas based on the 2015 LAHSA survey. The impact analysis estimated the potential displacement of the existing homeless population as a result of the proposed Project.

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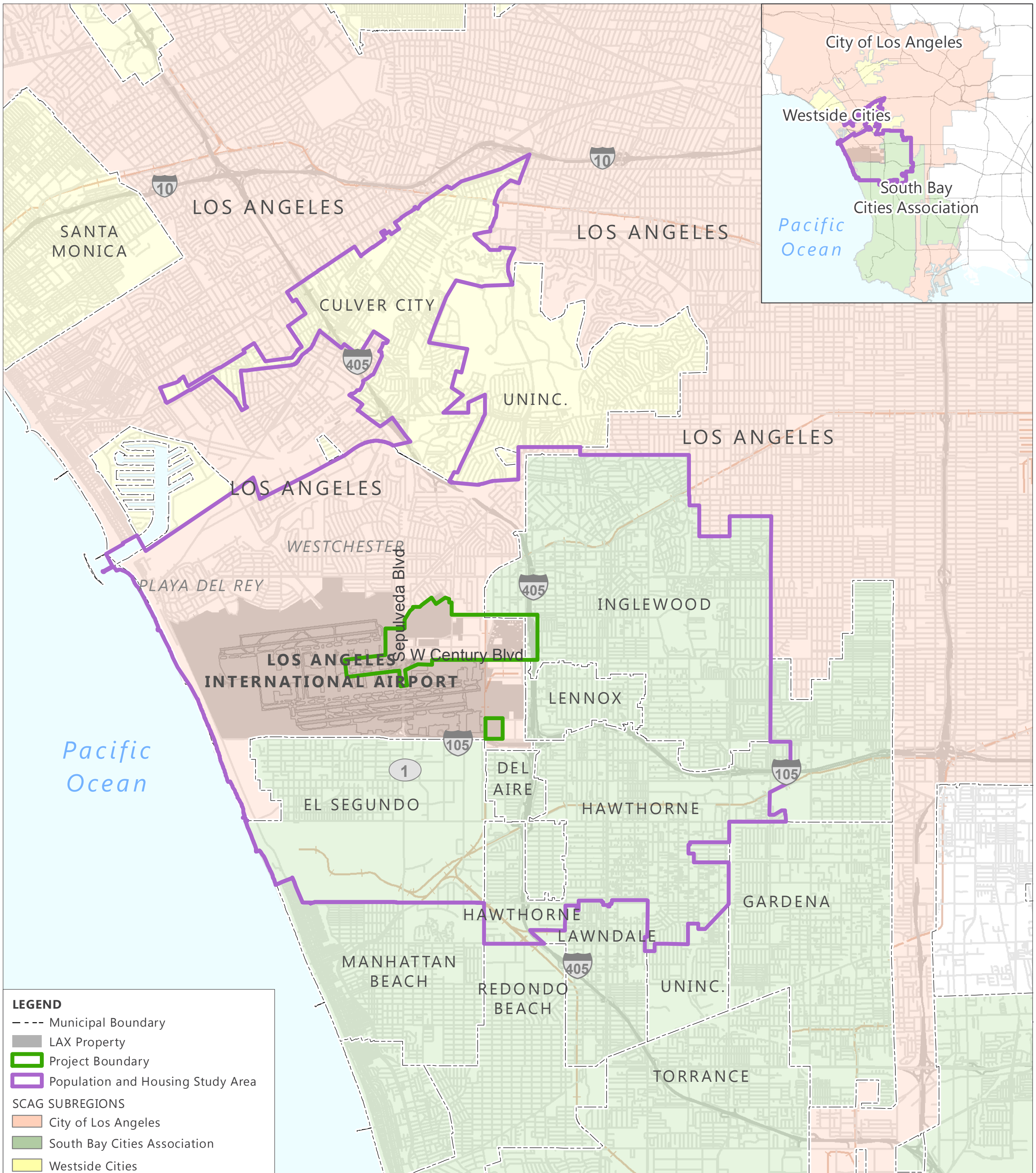
5 Southern California Association of Governments, *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future, Growth Forecast Appendix*, adopted April 4, 2012, Available: http://rtpscs.scag.ca.gov/Pages/2012-2035-RTP-SCS.aspx.

6 U.S. Department of Commerce, U.S. Census Bureau, "Tiger Products," Available: https://www.census.gov/geo/maps-data/data/tiger.html, accessed October 2015.

7 U.S. Department of Commerce, U.S. Census Bureau, "Geographic Terms and Concepts—Census Tract," Available: https://www.census.gov/geo/reference/gtc/gtc_ct.html, accessed October 2015.

8 U.S. Department of Commerce, U.S. Census Bureau, "Geographic Terms and Concepts—Census Tract," Available: https://www.census.gov/geo/reference/gtc/gtc_ct.html, accessed October 2015.

9 Los Angeles Homeless Services Authority, "About LAHSA," Available: http://www.lahsa.org/about, accessed March 2016.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); Southern California Association of Governments, 2009 SCAG Subregion GIS Data, http://gisdata.scag.ca.gov/Pages/GIS-Library.aspx, (accessed: November 18, 2015).

PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 9,000 ft.

FIGURE 4.10-1

Population and Housing Study Area

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Employment data was obtained from the Economic Roundtable, which developed an in-depth demographic and economic profile of residents, workers, and businesses for the LAX area, as well as an analysis of the direct and indirect economic impacts of the Landside Access Modernization Program Project and LAX.[10]

Employment data was also obtained from the California Department of Education (CDE)[11] for the Stella Middle Charter and Bright Star Secondary Charter Academies, which are located in the Manchester Square area. Projected employment was compared against these sources of data for the Project site and the significance thresholds to determine potential impacts.

4.10.3 EXISTING CONDITIONS

4.10.3.1 Regulatory Setting

4.10.3.1.1 Federal Regulations

Acquisition of property and relocation of residents and businesses by federally funded airports such as LAX is governed by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (codified as amended at 42 USC 4601-4655), its implementing regulations (49 CFR Part 24), and FAA Advisory Circular 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*.[12] The Uniform Act, requires timely and orderly relocation of residents into comparable, decent, safe, and sanitary replacement housing within their financial means.

4.10.3.1.2 State Regulations

California Government Code §7260 establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a public entity. The primary purpose is to ensure that these persons shall not suffer disproportionate injuries as a result of programs and projects designed for the benefit of the public as a whole and to minimize the hardship of displacement on these persons.

4.10.3.1.3 Regional Regulations and Plans

Southern California Association of Governments

SCAG is a federally designated Metropolitan Planning Organization (MPO) representing six counties (Ventura, Orange, San Bernardino, Riverside, Imperial, and Los Angeles). SCAG is mandated by federal and state law to research and draw up plans for transportation, growth management, hazardous waste management, and a

[10] Flaming, Daniel, Ph.D., President, Economic Roundtable, Personal Communication, March 1, 2016.

[11] California Department of Education, "DataQuest," Available: http://dq.cde.ca.gov/dataquest/dataquest.asp, accessed March 2016.

[12] U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5100-17, Change 6, *Land Acquisition and Relocation Assistance for Airport Improvement Program (AIP) Assisted Projects*, November 7, 2005.

regional growth forecast that is the foundation for these plans and regional air quality plans developed by the South Coast Air Quality Management District (SCAQMD). SCAG is responsible for reviewing regionally significant plans, projects, and programs for consistency with SCAG's adopted regional plans.

SCAG 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy

The 2016–2040 RTP/SCS[13] was adopted by SCAG's Regional Council on April 7, 2016 to reflect changes in economic, policy, and demographic conditions since the previously adopted 2012–2035 RTP/SCS. One important piece of legislation that influenced the development of the 2016–2040 RTP/SCS is the surface and transportation funding and authorization bill known as the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law by President Barack Obama on July 6, 2012.

The primary goal of an RTP is to increase mobility for the region's residents and visitors. However, SCAG in recent years has placed a strong emphasis on sustainability by including the SCS in the RTP. The SCS outlines a plan for integrating the transportation network with a comprehensive land use system that responds to projected housing and transportation demands resulting from growth and demographic changes.

As part of the 2016–2040 RTP/SCS, SCAG prepared the Regional Growth Forecast, which contains a set of socioeconomic projections. Categorized by county and city, the report includes historical data from 2012, and projections of population, housing, and employment for 2040. The socioeconomic estimates and projections in the Growth Forecast are used for federal- and state-mandated long-range planning efforts, such as the RTP, the Air Quality Management Plan (AQMP), the Regional Transportation Improvement Program (RTIP), and the Regional Housing Needs Assessment (RHNA). The estimates also provide guidance to local governments in planning for jobs and housing.

Chapter 5, The Road to Greater Mobility and Sustainable Growth, of the 2016–2040 RTP/SCS, outlines a standards-based population and housing mitigation that encourages: (1) to evaluate alternative route alignments and transportation facilities that minimize the displacement of homes and businesses; (2) prioritize the use of existing right-of-ways, wherever feasible; (3) develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisitions and construction; and (4) construction of affordable housing units.

Furthermore, the 2016–2040 RTP/SCS includes a strong commitment to reduce emissions from transportation sources to comply with Senate Bill 375, improve public health, and meet the National Ambient Air Quality Standards set forth by the federal Clean Air Act. The 2016-2040 RTP/SCS focuses on the interconnected components of the economic, social, and transportation investments required to achieve a sustainable regional multimodal transportation system. The goals and policies of the 2016–2040 RTP/SCS require the participation of individual municipalities and multi-level investment of stakeholders throughout the region.

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[13] 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.

Performance measures within the 2016–2040 RTP/SCS that are relevant to population, housing, and employment include: jobs-housing imbalance or jobs-housing mismatch; gentrification and displacement; and accessibility to employment and services. The 2016–2040 RTP/SCS has three additional goals since the previously adopted 2012–2035 RTP/SCS: (1) align plan investments and polices with improving regional economic development and competitiveness; (2) encourage and create incentives for energy efficiency; and (3) maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies. To reduce the impact of passenger trips on ground transportation congestion, one of the strategies in the 2016–2040 RTP/SCS includes supporting on-going local planning efforts and the development of transit access to airports.

The 2016–2040 RTP/SCS identifies the Automated People Mover (APM), Intermodal Transportation Facilities (ITFs), and the Consolidated Rental Car Facility (CONRAC) at LAX as ground access improvements to be initiated and/or completed by 2040. These improvements support the 2016-2040 RTP/SCS initiative to improve airport access.

4.10.3.1.4 Local Regulations and Plans[14]

Los Angeles World Airports Construction Project Labor Agreement

Effective January 1, 2011, LAWA signed a 10-year extension to the Project Labor Agreement (PLA) that was originally entered into November 1999 between various labor organizations and their affiliates.[15] The existing PLA covers more than $2 billion of capital improvement projects at airports and properties owned and operated by LAWA. The PLA is intended to facilitate careers in the construction industry and to promote employment opportunities during construction of various LAWA-operated projects. The PLA also helps ensure the timely completion of construction projects and increases participation of local residents in the development of LAX. Specifically, the PLA requires at least 30 percent of employees hired by all contractors and subcontractors to be local residents from the Los Angeles area.

City of Los Angeles General Plan

Government Code Section 65300 et seq. requires that each county and city prepare and adopt a comprehensive, long-term plan for its future development, often called the General Plan. The General Plan must contain seven elements: land use, circulation, housing, conservation, open space, noise, and safety.

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[14] General Plan projections for the County of Los Angeles, Westchester–Playa del Rey Community Plan, Culver City, City of El Segundo, City of Hawthorne and City of Inglewood are discussed below in Section 4.10.3.2.

[15] Los Angeles Department of Airports, *Construction Project Labor Agreement,* November 19, 1999, Available: https://www.lawa.org/uploadedFiles/LAWA/Business/LAWA%20PLA%20Extension%20Complete%20Packet%20-%20FINAL%20with%20ALL%20Signatures%20-%2001-07-11.pdf; City of Los Angeles, Los Angeles World Airports, News Release: Labor Agreement for Los Angeles World Airports Extended, December 14, 2010, Available: https://www.parsons.com/Media%20Library/10-12-pci-lawa-pla.pdf.

The City of Los Angeles General Plan Framework Element was first adopted in 1995 and establishes a citywide comprehensive long-range growth strategy that is implemented through amendments to the community plans, zoning ordinances, and other relevant plans and regulations maintained by the City of Los Angeles. The Framework Element encourages growth in higher-intensity commercial and mixed-use districts, centers and boulevards, and in proximity to transit. It supersedes the more detailed community and specific plans. It does not promote population growth but establishes policies to best accommodate population growth should it occur. The Framework Element is based on projections for population, housing, and employment provided in SCAG growth forecasts.

The proposed Project extends over two community plan areas contained in the City of Los Angeles General Plan: the Westchester-Playa del Rey Community Plan and the LAX Plan areas. The Westchester–Playa del Rey Community Plan[16] has a theoretical maximum land use and population capacity greater than the projected development likely to occur, in order to accommodate changes in population growth. The Westchester–Playa del Rey Community Plan includes appropriate policies and implementation measures that also encompass policies contained in the General Plan Framework Element.

LAX Plan

The LAX Plan was adopted concurrently with the LAX Master Plan, approved by the Los Angeles City Council in December 2004 and amended in 2013. The LAX Plan is part of the Land Use Element of the City of Los Angeles General Plan. The LAX Plan[17] is intended to promote an arrangement of Airport uses that encourages and contributes to the modernization of the Airport in an orderly and flexible manner within the context of the City and region. The LAX Plan also indicates that failure to modernize LAX would impede the ability to meet Airport users' future needs and could threaten the Airport's position as one of the nation's premiere airports, thereby limiting the region's future economic vitality. The LAX Plan establishes the following policies and programs regarding economic benefits, including jobs and commerce, attributable to LAX:

- Sustain jobs and economic output provided to the local, regional, and state economies.
- Modernize, upgrade, and improve LAX in order to sustain the Airport's economic benefits.
- Provide for an efficient arrangement of on-Airport cargo facilities.
- Locate these on-Airport uses that are dependent on secondary, ancillary commercial uses, adjacent to such uses.

While the LAX Plan identifies these economic-related policies, it does not contain any measurable standards or thresholds to address potential population and housing impacts for future Airport projects.

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16 City of Los Angeles, Department of City Planning, *Westchester-Playa del Rey Community Plan*, adopted April 13, 2004, as amended.

17 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

4.10.3.2 Population, Housing, and Employment

The existing and projected population, housing, and employment conditions for the Population and Housing Study Area and Project site are described in the following sections. Population, housing characteristics, and employment data are based on information gathered from the 2010 U.S. Census; the California DOF; the California EDD; SCAG's 2016–2040 RTP/SCS Growth Forecast; and local general plan projections. These data sets reflect the most recent data available for the population, housing, and employment characteristics for the Population and Housing Study Area.

4.10.3.2.1 Study Area

U.S. 2010 Census

The U.S. 2010 Census contains specific demographic data for the jurisdictions within the Population and Housing Study Area. U.S. 2010 Census data is categorized into several geographic types, such as state, county, or city. Demographic data is also available for Census tracts.

For the purposes of evaluating the existing demographics of the Population and Housing Study Area, U.S. 2010 Census data was utilized by individual jurisdiction, including Census tract data within the unincorporated County of Los Angeles communities of Del Aire and Lennox; the City of Los Angeles; Culver City; the City of El Segundo; the City of Hawthorne; and the City of Inglewood. It should be noted that the data collected for the City of Los Angeles includes the entire jurisdictional area for the City because the U.S. Census does not further define the City by individual community areas. **Table 4.10-1** provides a summary of the population, housing, and employment characteristics for each jurisdiction entirely or partially included in the Population and Housing Study Area, as identified by the U.S. 2010 Census.

California Department of Finance/California Employment Development Department

The California DOF Demographic Research Unit produces a data set for state planning and budgeting purposes called the "E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2015 with 2010 Census Benchmark" (E-5 Report). This data set is produced by the Demographic Research Unit for state planning and budgeting. The E-5 Report provides estimated population and housing data derived from the administrative records of several state and federal government departments and agencies, as well as from local jurisdictions.[18] The population estimates incorporate the U.S 2010 Census counts.

Each month, the California EDD Labor Market Information Division (LMID) releases revised and preliminary civilian labor force, unemployment rates, and industry employment by geographic area for California

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18 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.

statewide, as well as for metropolitan areas, counties, and subcounty areas.[19] The LMID also provides annual economic and demographic data and occupation information.

Table 4.10-1: U.S. 2010 Census Population, Housing, and Employment Data for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

JURISDICTION	POPULATION	TOTAL HOUSING UNITS	OCCUPIED HOUSING UNITS	VACANT HOUSING UNITS	EMPLOYMENT	AVERAGE HOUSEHOLD SIZE [1/]	JOBS PER HOUSEHOLD
County of Los Angeles [2/]	9,818,605	3,445,076	3,241,204	203,872	4,522,917	2.98	1.40
Del Aire	10,001	3,428	3,291	137	4,947	3.04	1.53
Lennox	22,753	5,487	5,250	237	9,110	4.33	1.78
City of Los Angeles	3,792,621	1,413,995	1,318,168	95,827	1,798,135	2.81	1.36
Surrounding Cities							
Culver City	38,883	17,491	16,779	712	20,973	2.30	1.25
El Segundo	16,654	7,410	7,085	325	9,518	2.34	1.34
Hawthorne	84,293	29,869	28,486	1,383	38,773	2.94	1.36
Inglewood	109,673	38,429	36,389	2,040	49,000	2.97	1.35
Total [3/]	**4,074,878**	**1,516,109**	**1,415,448**	**100,661**	**1,930,456**	**2.96**	**1.42**

NOTES:

1/ Persons per household

2/ County of Los Angeles total values include the entire jurisdictional area of the County and are not exclusive to the unincorporated areas.

3/ The total existing demographics within the Study Area do not include the entire County of Los Angeles. These values were included for comparative purposes only.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, "American Fact Finder," Available: http://factfinder2.census.gov, accessed September 2015.
PREPARED BY: Ricondo & Associates, Inc., June 2016.

Tables 4.10-2 and **4.10-3**, provide a summary of the population and housing characteristics for each jurisdiction entirely or partially included in the Population and Housing Study Area, as identified by the California DOF. **Table 4.10-4** provides a summary of the employment characteristics for each jurisdiction entirely or partially included in the Population and Housing Study Area, as identified by the California EDD. The unemployment rate trends for years 2010 through 2015 for jurisdictions entirely or partially included in the Population and Housing Study Area are shown in **Table 4.10-5**.

19 State of California, Employment Development Department, "Labor Market Data Library," Available: http://www.labormarketinfo.edd.ca.gov/data/labor-market-data-library.html, accessed October 2015.

[Draft]

Table 4.10-2: Department of Finance Forecast of Population for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2010	2015	2020*	2024*	2025*	2030*	2035*
Los Angeles County[1/]	9,818,605	10,136,559	10,464,809	10,735,913	10,803,689	11,153,543	11,514,726
City of Los Angeles	3,792,621	3,957,022	4,128,549	4,271,720	4,307,512	4,494,232	4,689,047
Culver City	38,883	39,773	40,683	41,428	41,615	42,567	43,451
City of El Segundo	16,654	17,000	17,353	17,642	17,714	18,082	18,457
City of Hawthorne	84,293	87,657	91,155	94,066	94,793	98,576	102,510
City of Inglewood	109,673	112,333	115,058	117,290	117,848	120,706	123,634

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the DOF. These estimations are used to show growth projections for Project years 2024 and 2035.

1/ County of Los Angeles total values include the entire jurisdictional area of the County and are not exclusive to the unincorporated areas.

SOURCE: 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.

PREPARED BY: Ricondo & Associates, Inc., November 2015.

Table 4.10-3: Department of Finance Forecast of Households for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area [1/]

	2010	2015	2020*	2024*	2025*	2030*	2035*
Los Angeles County[2/]	3,239,280	3,285,160	3,331,690	3,369,441	3,378,879	3,426,736	3,475,271
City of Los Angeles	1,316,244	1,347,104	1,378,688	1,404,547	1,411,012	1,444,093	1,477,951
Culver City	16,779	16,848	16,917	16,973	16,987	17,057	17,127
City of El Segundo	7,085	7,100	7,115	7,127	7,130	7,145	7,160
City of Hawthorne	28,486	29,082	29,690	30,187	30,312	30,946	31,593
City of Inglewood	36,389	36,594	36,800	36,966	37,007	37,216	37,426

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the DOF. These estimations are used to show growth projections for Project years 2024 and 2035.

1/ Occupied Housing Units

2/ County of Los Angeles total values include the entire jurisdictional area of the County and are not exclusive to the unincorporated areas.

SOURCE: 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.

PREPARED BY: Ricondo & Associates, Inc., November 2015.

[Draft]

Table 4.10-4: California Employment Development Department Forecast of Employment for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2010	2015	2020*	2024*	2025*	2030*	2035*
Los Angeles County [1/]	4,302,300	4,674,800	5,079,552	5,431,388	5,519,347	5,997,221	6,516,470
City of Los Angeles	1,710,000	1,867,900	2,040,380	2,191,106	2,228,787	2,434,592	2,659,400
Culver City	19,900	21,400	23,013	24,401	24,748	26,613	28,619
City of El Segundo	8,700	9,400	10,156	10,810	10,973	11,856	12,810
City of Hawthorne	37,600	41,300	45,364	48,935	49,828	54,731	60,117
City of Inglewood	45,400	48,900	52,670	55,918	56,730	61,104	65,814

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the EDD. These estimations are used to show growth projections for Project years 2024 and 2035.

1/ County of Los Angeles total values include the entire jurisdictional area of the County and are not exclusive to the unincorporated areas.

SOURCE: State of California, Employment Development Department, "Labor Force and Unemployment Rate for Cities and Census Designated Places," 2015, Available: http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html.

PREPARED BY: Ricondo & Associates, Inc., April 2016.

Table 4.10-5: California Employment Development Department Unemployment Rate for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2010	2011	2012	2013	2014	2015
Los Angeles County	12.5%	12.2%	10.9%	9.7%	8.2%	6.7%
City of Los Angeles	13.2%	12.9%	11.5%	10.3%	8.7%	7.1%
Culver City	9.3%	9.1%	8.1%	7.2%	6.1%	4.9%
City of El Segundo	7.1%	6.9%	6.2%	5.5%	4.6%	3.7%
City of Hawthorne	11.3%	11.0%	9.8%	8.7%	7.4%	6.0%
City of Inglewood	16.1%	15.7%	14.1%	12.7%	10.8%	8.8%

SOURCE: State of California, Employment Development Department, "Labor Force and Unemployment Rate for Cities and Census Designated Places," 2015, Available: http://www.labormarketinfo.edd.ca.gov/CES/Labor_Force_Unemployment_Data_for_Cities_and_Census_Areas.html.

PREPARED BY: Ricondo & Associates, Inc., April 2016.

Southern California Association of Governments

The Project site falls within the six-county jurisdiction of SCAG, which is the designated MPO for the region. SCAG further defines its boundaries into 15 "subregions" which represent portions of Southern California with shared interests, issues, and geography.[20] Subregions play an important role as a conduit between SCAG and the cities and counties of the region by participating and providing input on SCAG's planning activities.[21]

As shown in Figure 4.10-1, the Population and Housing Study Area consists of portions of the City of Los Angeles, Westside Cities, and South Bay Cities Association SCAG subregions. The jurisdictions within these subregions are as follows:

- **City of Los Angeles Subregion:** includes the City of Los Angeles, the City of San Fernando, and parts of unincorporated Los Angeles County.
- **South Bay Cities Association Subregion:** includes the Cities of Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Inglewood, Lawndale, Lomita, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, and Torrance, as well as parts of unincorporated Los Angeles County, including the communities of Del Aire and Lennox.
- **Westside Cities Subregion:** includes the cities of Beverly Hills, Culver City, Santa Monica, and West Hollywood, as well as parts of unincorporated Los Angeles County.

The Project site and the LAX and Westchester–Playa del Rey Community Plan areas fall within the City of Los Angeles Subregion boundaries. The Cities of Hawthorne, El Segundo, and Inglewood, and the unincorporated communities of Del Aire and Lennox, located east and south of the Project site, are within the Population and Housing Study Area and fall within the boundaries of the South Bay Cities Association Subregion. Culver City, located north of the Project site, is also within the Population and Housing Study Area and falls within the boundaries of the Westside Cities Subregion.

The Final 2016–2040 RTP/SCS categorizes demographic growth projections by county and city. **Tables 4.10-6** through **4.10-8** provide a summary of the population, housing, and employment characteristics for each jurisdiction entirely or partially included in the Population and Housing Study Area, as identified by SCAG's 2016–2040 RTP/SCS Growth Forecasts.[22]

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[20] Southern California Association of Governments, "About SCAG," Available: http://www.scag.ca.gov/about/Pages/Home.aspx, accessed October 2015.

[21] Southern California Association of Governments, "About SCAG," Available: http://www.scag.ca.gov/about/Pages/Home.aspx, accessed October 2015.

[22] 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.

Table 4.10-6: SCAG 2016–2040 RTP/SCS Population Forecast for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2012	2024*	2035*	2040
Unincorporated Los Angeles County	1,040,700	1,140,557	1,232,093	1,273,700
City of Los Angeles	3,845,500	4,172,886	4,472,989	4,609,400
Culver City	39,100	39,786	40,414	40,700
City of El Segundo	16,700	16,957	17,193	17,300
City of Hawthorne	85,300	86,029	86,696	87,000
City of Inglewood	110,900	118,657	125,768	129,000
Total for Jurisdictions in the Population and Housing Study Area	**5,138,200**	**5,574,871**	**5,975,154**	**6,157,100**

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the SCAG. These estimations are used to show growth projections for Project years 2024 and 2035.

SOURCE: 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.
PREPARED BY: Ricondo & Associates, Inc., February 2016.

Table 4.10-7: SCAG 2016–2040 RTP/SCS Household Forecast for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2012	2024*	2035*	2040
Unincorporated Los Angeles County	292,700	335,429	374,596	392,400
City of Los Angeles	1,325,500	1,481,843	1,625,157	1,690,300
Culver City	16,800	17,100	17,375	17,500
City of El Segundo	7,100	7,229	7,346	7,400
City of Hawthorne	28,600	29,200	29,750	30,000
City of Inglewood	36,600	39,471	42,104	43,300
Total for Jurisdictions in Population and Housing Study Area	**1,707,300**	**1,910,271**	**2,096,329**	**2,180,900**

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the SCAG. These estimations are used to show growth projections for Project years 2024 and 2035.

SOURCE: 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.

PREPARED BY: Ricondo & Associates, Inc., February 2016.

Table 4.10-8: SCAG 2016–2040 RTP/SCS Employment Forecast for Jurisdictions Entirely or Partially Included in the Population and Housing Study Area

	2012	2024*	2030*	2035
Unincorporated Los Angeles County	222,900	250,971	276,704	288,400
City of Los Angeles	1,696,400	1,898,986	2,084,689	2,169,100
Culver City	44,100	47,914	51,411	53,000
City of El Segundo	38,400	41,400	44,150	45,400
City of Hawthorne	27,200	29,300	31,225	32,100
City of Inglewood	31,100	33,800	36,275	37,400
Total for Jurisdictions in Population and Housing Study Area	**2,060,100**	**2,302,371**	**2,524,454**	**2,625,400**

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by the SCAG. These estimations are used to show growth projections for Project years 2024 and 2035.

SOURCE: 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.

PREPARED BY: Ricondo & Associates, Inc., February 2016.

Local General Plan Projections

In addition to data from the U.S. Census Bureau, DOF, EDD, and SCAG, existing and projected population, housing, employment growth projections, and other demographic data (as available) was obtained from the general plans for each of the jurisdictions within the Population and Housing Study Area. **Tables 4.10-9** through **4.10-15** provide a summary of the population, housing, and employment characteristics identified by each jurisdiction's general plan for the Population and Housing Study Area.

County of Los Angeles

The County of Los Angeles General Plan 2035 contains seven elements, including the Housing Element.[23] The Housing Element serves as a policy guide to address the comprehensive housing needs of the County's unincorporated areas, including Del Aire and Lennox. According to the County's Housing Element, the County of Los Angeles had a population of 1,057,088 people and 299,358 households within its unincorporated areas for year 2010.[24] The County's General Plan 2035 identifies the unincorporated areas of its South Bay Planning Area, consisting of the communities of Del Aire and Lennox, to have a 2010 population of 69,612 people and

23 County of Los Angeles, *Los Angeles County General Plan*, Adopted October 6, 2015, Available: http://planning.lacounty.gov/generalplan/generalplan.

24 County of Los Angeles, *County of Los Angeles Housing Element, 2014-2021*, Certified April 30, 2014, Available: http://planning.lacounty.gov/housing.

21,348 housing units. The County's General Plan 2035 projects approximately 1,399,500 people and 3,852,000 households by 2035 within its unincorporated areas, in total,[25]

Westchester–Playa del Rey

The Westchester–Playa del Rey Community Plan comprises two communities within the City of Los Angeles: Westchester and Playa del Rey. The Community Plan Area (CPA) contains approximately 5,766 acres and is located north of and adjacent to LAX. The Community Profile section of the Community Plan provides an overview of population, housing and socioeconomic demographics for the CPA and compares it to the rest of the city.[26] Historic and projected data for this CPA is shown in **Table 4.10-9**.

Table 4.10-9: General Plan Projections—Westchester–Playa del Rey Community Plan

	2000 1/	2009 2/	2024*	2035*
Population	51,255	54,235	59,088	62,648
Households	22,794	23,425	24,506	25,298
Employment	28,045	—	—	—

NOTES:

* Calculated by applying the estimated 2009 annual growth rate identified by the Westchester–Playa del Rey Community Plan Profile

— = Not available

1/ Based on U.S. Census 2000 data

2/ Estimate based on U.S. Census 2000 data

SOURCE: City of Los Angeles, Department of City Planning, *Westchester–Playa del Rey Community Plan*, "Community Profile," Available: http://planning.lacity.org/DRU/Locl/LocPfl.cfm?geo=cp&loc=Wch, accessed September 2015.

PREPARED BY: Ricondo & Associates, Inc., November 2015.

Culver City

The Culver City General Plan contains nine elements, including the Housing Element.[27] The Housing Element specifically addresses the city's vision as it relates to housing. It is the primary planning guide to identify and prioritize the housing needs of the city and outline the goals, policies, and programs to address those needs. Population, households and employment data for Culver City, as included in the Housing Element, are shown in **Table 4.10-10**.

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25 The growth forecast within the County of Los Angeles General Plan 2035 is from the SCAG 2012–2035 RTP/SCS.

26 City of Los Angeles, Department of City Planning, *Westchester–Playa del Rey Community Plan*, "Community Profile," Available: http://planning.lacity.org/DRU/Locl/LocPfl.cfm?geo=cp&loc=Wch, accessed September 2015.

27 City of Culver City, *City of Culver City General Plan, October 2013-2021 Housing Element*, January 2014, Available: http://www.culvercity.org/work/building-culver-city/culver-city-general-plan.

Table 4.10-10: General Plan Projections—Culver City

	2008 1/	2020 1/	2024*	2035 1/
Population	38,900	39,300	39,487	40,000
Households	16,800	17,000	17,080	17,300
Employment	45,400	47,900	48,567	50,400

NOTES:

* Estimated by applying annual growth rates calculated from historic data reported by SCAG.

1/ Projections based on the 2012–2035 RTP/SCS Growth Forecast (2012).

SOURCE: City of Culver City, *City of Culver City General Plan, October 2013-2021 Housing Element*, January 2014.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

City of El Segundo

The City of El Segundo Housing Element[28] sets housing goals and policies for the city to address the city's current projected needs. The Housing Element is composed of the following major components: assessment of past housing achievements; analysis of population, household, and employment bases; evaluation of housing needs; and preparation of potential housing sites in the community. Population, household, and employment data for the City of El Segundo, as included in the Housing Element, are shown in **Table 4.10-11**.

Table 4.10-11: General Plan Projections—City of El Segundo

	2000	2008	2010	2015*	2020	2024*	2035*
Population	16,033	—	16,654	16,977	17,305*	17,573	18,322
Households	7,060	—	7,085	7,098	7,110*	7,120	7,148
Employment1/	—	53,800	53,833*	53,917	54,000	54,373	55,400

NOTES:

* Estimated by applying annual growth rates to those historic data reported in the City of El Segundo General Plan Housing Element.

— = Not available

1/ Projections based on the 2012–2035 RTP/SCS Growth Forecast.

SOURCE: City of El Segundo, Planning and Building Safety Department, *City of El Segundo General Plan, Housing Element Update*, November 2013, Available: http://www.elsegundo.org/civicax/filebank/blobdload.aspx?BlobID=11314.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

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28 City of El Segundo, Planning and Building Safety Department, *City of El Segundo General Plan, Housing Element Update*, November 2013, Available: http://www.elsegundo.org/civicax/filebank/blobdload.aspx?BlobID=11314.

City of Hawthorne

The City of Hawthorne General Plan contains eight elements, including the Housing Element.[29] The Housing Element identifies strategies and programs that focus on conserving and improving affordable housing; providing adequate sites for residential development; assisting in the provision of affordable housing; removing governmental constraints to housing development; and promoting equal housing opportunities. Population, household, and employment data for the City of Hawthorne, as included in the Housing Element, are shown in **Table 4.10-12**.

Table 4.10-12: General Plan Projections—City of Hawthorne

	2000	2010	2011 1/	2015*	2024*	2025*	2030*	2035*
Population	84,112	84,293	—	84,384	84,547	84,565	84,656	84,747
Households	28,536	28,486	—	28,461	28,416	28,411	28,386	28,361
Employment	32,803	—	38,228	—	—	—	—	—

NOTE:

* Estimated by applying annual growth rates to those historic data reported in the City of El Segundo General Plan Housing Element.

— = Not available

1/ Employment profile based on the U.S. Census 2007-2011 American Community Survey (ACS).

SOURCE: City of Hawthorne, *City of Hawthorne General Plan, 2013–2021 Housing Element*, February 2014, Available: http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/hawthorne_5th_adopted021614.pdf.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

City of Inglewood

The City of Inglewood Housing Element presents a framework "to provide its residents with decent and affordable housing."[30] The program establishes policies to create or preserve quality residential neighborhoods while identifying current and future housing needs, and establishes policies and programs to mitigate or correct housing deficiencies. Population, household, and employment data for the City of Inglewood, as included in the Housing Element, are shown in **Table 4.10-13**. The Housing Element illustrates a population increase through year 2000; however, by 2010 the population decreased back to 1990 levels. As such, demographic growth projections, based on data available in the Housing Element, could not be estimated for years 2024 and 2035.

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[29] City of Hawthorne, *City of Hawthorne General Plan, 2013–2021 Housing Element*, February 2014, Available: http://www.hcd.ca.gov/housing-policy-development/housing-resource-center/plan/he/housing-element-documents/hawthorne_5th_adopted021614.pdf.

[30] City of Inglewood, *City of Inglewood General Plan, Housing Element 2013–2021*, adopted January 28, 2014, Available: http://www.cityofinglewood.org/depts/economic_n_community_development/planning/general_plan.asp.

Table 4.10-13: General Plan Projections—City of Inglewood

	1990	2000	2010
Population	109,602	112,580	109,673
Households	—	36,805	36,389
Employment	—	42,375	—

NOTE:

— = Not available

SOURCE: City of Inglewood, *City of Inglewood General Plan, Housing Element 2013–2021*, adopted January 28, 2014.
PREPARED BY: Ricondo & Associates, Inc., November 2015.

4.10.3.2.2 Project Site

Population

To further refine the most applicable representation of the existing population, six U.S. 2010 Census tracts located within the Project site were identified, as shown in **Table 4.10-14** and on **Figure 4.10-2**. Four U.S. 2010 Census tracts (6014.01, 6014.02, 6015.01, and 9800.28) are located in portions of the Project site that do not contain applicable population and housing. The only two portions of the Project site containing a known population within the Project site include the Belford and Manchester Square areas, which are respectively located within U.S. 2010 Census tracts 2772.00 and 2774.00. As shown in Table 4.10-14, these U.S. Census tracts in 2010 had a combined population of 4,023 people.[31]

However, as of June 2016, LAWA records indicate that all but 38 residential parcels between the Belford and Manchester Square areas have been acquired as part of the *Los Angeles World Airports Relocation Plan: Manchester Square and the Belford Area*[32]—also known as the existing Aircraft Noise Mitigation Program (ANMP) Relocation Plan for the Belford and Manchester Square areas.[33] According to City of Los Angeles Zone Info and Map Access System (ZIMAS) records, these remaining 38 parcels have a total of 251 dwelling units.[34] Based on the average persons per household for U.S. 2010 Census tracts 2772.00 and 2774.00 identified in Table 4.10-14, an estimated 530 residents remain in the Belford and Manchester Square areas.

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[31] U.S. Department of Commerce, U.S. Census Bureau, "TIGER Products," Available: https://www.census.gov/geo/maps-data/data/tiger.html, accessed October 2015.

[32] City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports Relocation Plan, Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford,* adopted by the Board of Airport Commissioners, June 2000.

[33] The Belford and Manchester Square areas respectively contain 1 and 37 remaining residential parcels, for a total of 38 residential parcels that have not been acquired as part of the existing ANMP Relocation Plan for the Belford and Manchester Square areas.

[34] City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

[Draft]

Table 4.10-14: Estimated 2010 Population and Housing of Census Tracts Located within the Project Site Boundary

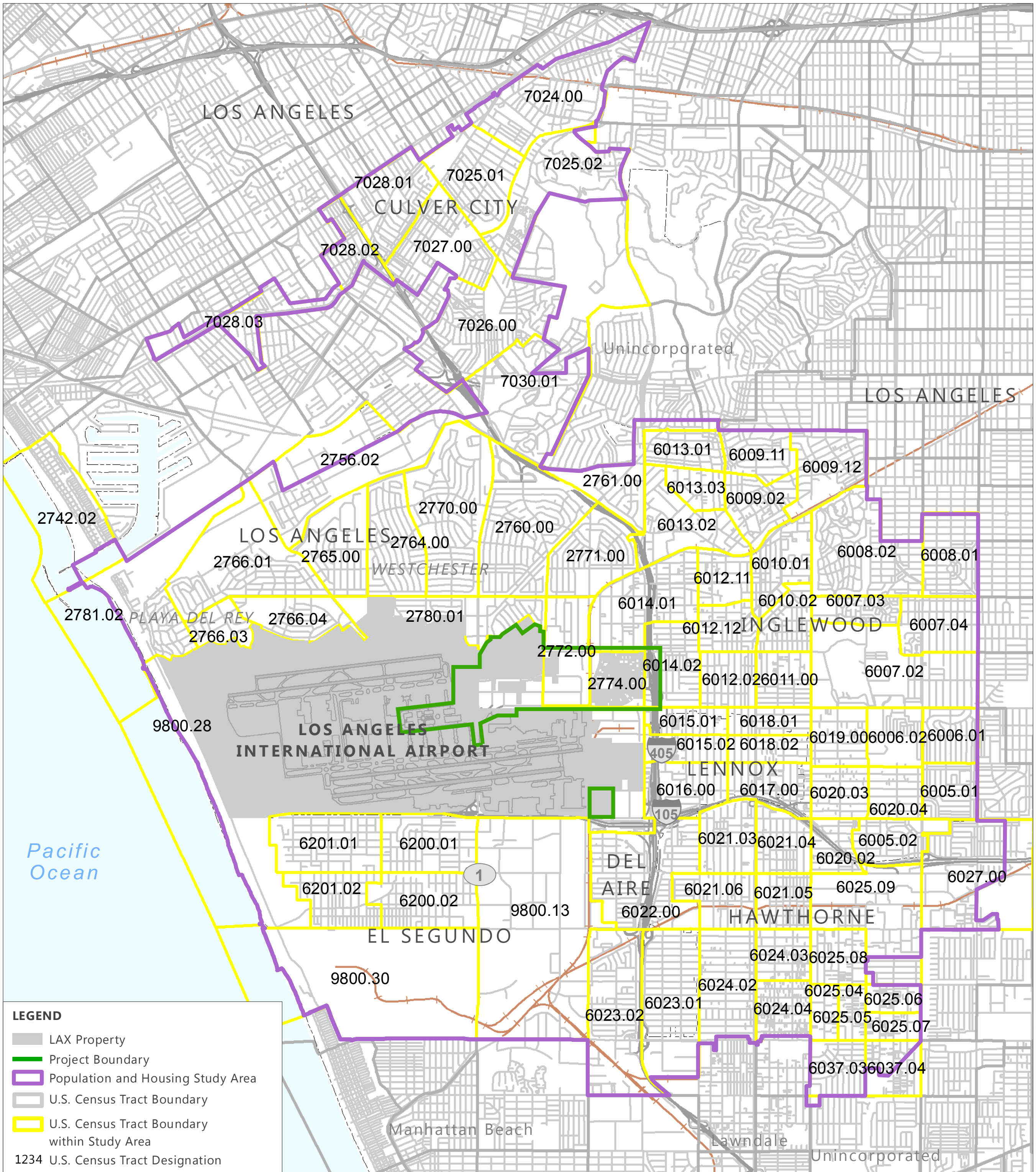
U.S. 2010 CENSUS TRACT	POPULATION	TOTAL HOUSING UNITS	PERSONS PER HOUSEHOLD
2772.00	2,490	1,134	2.20
2774.00	1,533	728	2.11
6014.01	0 [1/]	0 [1/]	0 [1/]
6014.02	0 [1/]	0 [1/]	0 [1/]
6015.01	0 [1/]	0 [1/]	0 [1/]
9800.28	0 [1/]	0 [1/]	0 [1/]
Total	**4,023**	**1,862**	**2.16**

NOTE:

1/ Existing demographic data not included in the Project site because the portion of the Project site located within these U.S. 2010 Census tracts do not contain population and housing.

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, "TIGER Products," Available: https://www.census.gov/geo/maps-data/data/tiger.html, accessed October 2015.

PREPARED BY: Ricondo & Associates, Inc., November 2015.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); U.S. Census, 2013 TIGER/Line Shapefiles, accessed online: http://www.census.gov/cgi-bin/geo/shapefiles2013/main, March 2014.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH

0 7,000 ft.

FIGURE 4.10-2

U.S. 2010 Census Tracts within the Population and Housing Study Area

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Housing

As previously mentioned, the only known residential uses on the Project site are within the Belford and Manchester Square areas, respectively located within U.S. 2010 Census tracts 2772.00 and 2774.00. In 2010, these two U.S. Census tracts had a total of 1,862 housing units, as shown in Table 4.10-14. However, as of June 2016, LAWA records indicate that all but 38 residential parcels between the Belford and Manchester Square areas have been acquired as part of existing ANMP Relocation Plan for the Belford and Manchester Square areas.[35] According to ZIMAS records, these remaining 38 parcels have a total of 251 dwelling units.[36]

In addition to persons living in built residential units, the Project site is known to contain a population of homeless persons, particularly within the Belford and Manchester Square areas. As previously discussed, the most recent estimated homeless count conducted by LAHSA was in 2015. Approximately 80 people live within the Belford and Manchester Square areas in some state of homelessness.[37] The City and County of Los Angeles have a variety of services and housing opportunities available to those in a state of homelessness, such as emergency and seasonal shelters provided by various non-profits and other homeless service providers.

The Los Angeles County Homeless Initiative, launched by the Los Angeles County Board of Supervisors in August 2015, contains developed strategies to combat homelessness within the County.[38] The strategies within the report include but are not limited to: providing subsidized housing, enhancing the emergency shelter system, and expanding interim housing and rental subsidies. In January 2016, the City of Los Angeles developed its own *Comprehensive Homeless Strategy* report (Report), which provides a regional approach to addressing homelessness that will guide the City's short- and long-term homelessness policy decisions.[39] The Report calls for substantially expanding staffing, services, rental subsidies, and permanent housing for the City's homeless residents. According to the Report, in 2015 there were approximately 12,726 beds available for individuals and 2,382 beds available for families at emergency shelters, rapid re-housing, programs, and transitional, and permanent supportive housing facilities.[40] LAHSA is currently partnering with the City and County of Los Angeles to coordinate the use of federal, state, and local funding to fulfill strategies identified within their respective reports.

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35 The Belford and Manchester Square areas respectively contain 1 and 37 remaining residential parcels, for a total of 38 residential parcels that have not been acquired as part of the existing ANMP Relocation Plan for the Belford and Manchester Square areas.

36 City of Los Angeles, *Zone Info and Map Access System*, Available: http://zimas.lacity.org/, accessed February 24, 2016.

37 Los Angeles Homeless Services Authority, "2015 Housing Counts by Census Tracts." Total homeless population for the Belford and Manchester Square areas based on U.S. Census tracts 2772.00 and 2774.00.

38 Los Angeles County, Chief Executive Office, *Los Angeles County Homeless Initiative–Approved Strategies to Combat Homelessness,* approved February 2016.

39 City of Los Angeles, *Comprehensive Homeless Strategy*, January 2016, Available: http://clkrep.lacity.org/onlinedocs/2015/15-1138-S1_misc_1-7-16.pdf.

40 City of Los Angeles, *Comprehensive Homeless Strategy*, January 2016, Available: http://clkrep.lacity.org/onlinedocs/2015/15-1138-S1_misc_1-7-16.pdf.

Employment

Employment within the Project site is characterized by the airport operations within the Central Terminal Area (CTA) and other related airport-support sectors outside the CTA, including, but not limited to, cargo and freight, rental car, and parking facilities. Other employment sectors within the Project site include various commercial, office, and light industrial uses, as well as employment associated with the Stella Middle Charter and Bright Star Secondary Charter Academies. As shown in **Table 4.10-15,** the total estimated employment located on LAWA-owned property ("LAX Footprint") in 2013 was approximately 33,200 employees.[41] As noted in Table 4.10-15, in 2013 there were an estimated 2,521 jobs associated with rental car facilities to be located in the Project site.[42] LAWA records indicate that approximately 53 percent of LAX-badged employees live within a 10-mile radius from the airport, with approximately 16 percent originating from within the Population and Housing Study Area.[43]

The total 2013 employment estimate in Table 4.10-15 also includes the existing employment associated with the Stella Middle Charter and Bright Star Secondary Charter Academies, both located in the Manchester Square area at 5431 W. 98th Street. While these two schools are not currently located on property owned by LAWA, they were included to reflect existing employment within the Project site. These two schools are estimated to have 22 and 11 full-time equivalent (FTE)[44] staff, respectively.[45]

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41 The LAX Footprint encompasses all properties owned by LAWA within and outside the CTA.

42 Flaming, Daniel, Ph.D., President, Economic Roundtable, Personal Communication, March 1, 2016.

43 Point C Partners, Analysis of LAWA Badge Data, September 30, 2015.

44 The full-time equivalent (FTE) is the number of hours worked by one employee on a full-time basis (40 hours per week).

45 California Department of Education, "DataQuest," Available: http://dq.cde.ca.gov/dataquest/dataquest.asp, accessed March 2016.

[Draft]

Table 4.10-15: Estimated 2013 Employment on LAX Footprint

INDUSTRY SECTOR	EMPLOYMENT
Air transportation	12,465
All other food manufacturing	1,653
Architectural, engineering, and related services	78
Automotive equipment rental and leasing	2,521 [1/]
Automotive repair and maintenance	534
Commercial and industrial machinery and equipment repair and maintenance	23
Construction of new commercial structures	17
Couriers and messengers	2,749
Custom computer programming services	30
Data-processing, hosting and related services	83
Education	33 [2/, 3/]
Electric power generation and distribution	54
Employment and payroll of local government, non-education	2,508
Employment services	14
Fitness and recreational sports centers	55
Full-service restaurants	43
General and consumer goods rental	36
Grant-making, giving and social advocacy organizations	1
Individual and family services	63
Investigation and security services	61
Limited-service restaurants	1,490
Management-consulting services	14
Office administrative services	108
Other support services	6
Professional schools	23
Retail—Electronics and appliance stores	84
Retail—Food and beverage stores	251
Retail—General merchandise stores	75
Scientific research and development services	19
Search, detection, and navigation instruments manufacturing	1
Securities and commodity contracts intermediation and brokerage	69
Services to buildings	13
Support activities for transportation	7,066
Transit and ground passenger transportation	206
Travel arrangement and reservation services	61
Wholesale trade	719
Total	**33,226**

NOTES:

1/ Includes 1,788 jobs associated with rental car facilities not located within the LAX Footprint.

2/ California Department of Education, "DataQuest," Available: http://dq.cde.ca.gov/dataquest/dataquest.asp, accessed March 2016.

3/ Includes estimated 2014-2015 employment associated with the Stella Middle Charter and Bright Star Secondary Charter Academies, both located in the Manchester Square area at 5431 W. 98th Street. These schools are currently not considered within the LAX Footprint.

SOURCE: Flaming, Daniel, Ph.D., President, Economic Roundtable, Personal Communication, March 1, 2016.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

4.10.4 THRESHOLDS OF SIGNIFICANCE

A significant impact would occur if the proposed Project would potentially result in one or more of the following:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure or employment generators).
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

These thresholds are derived from the State CEQA Guidelines Initial Study Checklist and the *L.A. CEQA Thresholds Guide*.[46]

4.10.5 IMPACT ANALYSIS

4.10.5.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project. The Phase 2 Program features (potential future related development) are discussed separately.

4.10.5.1.1 Induce Substantial Population Growth in an Area

Construction

Construction of the proposed Project does not include any permanent or temporary residential structures that would induce population growth directly through the construction of housing. Therefore, construction of the proposed Project would not directly induce substantial population growth (for example, by proposing new homes and businesses) in the Population and Housing Study Area. Impacts would be less than significant.

As described in Section 4.12, *Transportation/Traffic*, various roadway and utility improvements are proposed during Phase 1 to support operations of the Project facilities and to provide efficient roadway circulation. Although the Project proposes roadway and utility improvements to existing roads and infrastructure, it does not involve the extension of roads or other infrastructure into undeveloped areas. Therefore, the proposed Project would not indirectly induce population growth through the extension of roads or other infrastructure into undeveloped areas.

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[46] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

However, the proposed Project would generate construction employment, which could indirectly induce population growth in the Population and Housing Study Area. As shown in **Table 4.10-16**, construction of the proposed Project would generate approximately 20 to 2,500 annual construction jobs between years 2018 and 2031.[47] To be conservative, construction of all Project elements was assumed to be completed by 2031 although the potential future related development may extend to 2035. On most days, there would be far fewer construction workers at the Project site, as construction workers are typically on the Project site on a temporary basis and during limited hours. In accordance with LAWA's existing PLA, construction of the proposed Project would maximize employment (at a minimum of 30 percent) of qualified local persons residing within the area. Construction of the proposed Project would also provide the ability for unemployed individuals, who already reside locally within the Population and Housing Study Area, to participate in construction employment opportunities. As such, construction workers would likely commute from the local Los Angeles area and would not require a relocation of their residency as a consequence of the construction job opportunities generated by the proposed Project.

Table 4.10-16: Estimated Landside Access Modernization Program Construction Employment

CONSTRUCTION YEAR	NUMBER OF EMPLOYEES
2017	210
2018	379
2019	1,461
2020	2,447
2021	1,485
2022	1,817
2023	1,467
2024	148
2025	21
2026	42
2027	299
2028	269
2029	172
2030	127
2031	27

SOURCE: Connico, April 2016.
PREPARED BY: Ricondo & Associates, Inc., May 2016.

[47] Connico, April 2016.

SCAG's 2016–2040 RTP/SCS Growth Forecast accounts for the components of the proposed Project as ground access improvement projects to be initiated and/or completed by 2040. The new employment generated by construction of the proposed Project would fit within SCAG's future employment forecast for jurisdictions included in the Population and Housing Study Area through year 2040 (see Table 4.10-8). At the proposed Project's peak employment of 2,447 construction employees in 2020, it would represent less than 1 percent of SCAG's employment forecast for jurisdictions included in the Population and Housing Study Area, which would be approximately 2,200,000 employees by 2020.[48] As the employment generated by the proposed Project accounts for a marginal percent of SCAG's employment forecast for jurisdictions included in the Population and Housing Study Area, it is not likely to indirectly induce substantial population growth.

Furthermore, construction jobs over the 14-year construction schedule would be temporary in nature, and due to the employment patterns of construction workers in Southern California, and the operation of the market for construction labor, construction workers are not likely, to any notable degree, relocate their residency as a consequence of the temporary construction employment opportunities presented by the proposed Project. Therefore, construction employment generated by the proposed Project would not indirectly induce substantial population growth in the Population and Housing Study Area. Impacts would be less than significant.

Operations

Operations of the proposed Project do not include any residential uses. SCAG's 2016–2040 RTP/SCS Growth Forecast currently projects a population of 6,157,100 people and a total of 2,180,900 households for jurisdictions within the Population and Housing Study Area through year 2040 (an increase from 2012 of approximately 20 percent and 27 percent, respectively). Given that the proposed Project does not include residential uses, its operations would not directly contribute to this projected population and housing growth within the Population and Housing Study Area.

Although the proposed Project does not include any residential development, there exists the potential for indirect population growth as a result of the proposed roadway and utility improvements or employment generated to operate the proposed Project components. As previously discussed, the roadway and utility improvements included in the proposed Project would not involve the extension of roads or other infrastructure into undeveloped areas. As such, the proposed Project would not indirectly induce population growth through the extension of roads or other infrastructure into undeveloped areas.

The employment that would be generated for operation of the proposed Project components is unlikely to indirectly induce population growth in the Population and Housing Study Area. Operation of the CONRAC is estimated to require approximately 1,200 employees. The other components of the proposed Project, including the APM and ITFs, is estimated to only require a modest number of employees (approximately 100) to carry out maintenance, operations, and administrative functions, or support for various on-site commercial amenities.

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48 Estimated by applying annual growth rates calculated from the SCAG 2016–2040 RTP/SCS Growth Forecast.

While approximately 1,300 employees would be required to operate the components of the proposed Project, the estimated 1,200 employees required to operate the CONRAC would likely be absorbed from the existing rental car workforce already supporting LAX. The CONRAC would provide a centralized location for multiple rental car agencies, which already serve LAX, into one location. These CONRAC employees would likely transfer their existing place of employment at various locations near LAX to the CONRAC. As shown in **Table 4.10-17**, the proposed Project would result in a net increase in approximately 100 employees, which represents a less than 1 percent increase in employment on the LAX Footprint. Any employees associated with operations of the proposed Project would likely commute from the local Los Angeles area, similar to existing patterns for LAX-badge employees.

Table 4.10-17: Landside Access Modernization Program Operational Employment

	NUMBER OF EMPLOYEES	PERCENTAGE INCREASE
Estimated 2013 Employment on LAX Footprint	**33,226**	
Landside Access Modernization Program Operational Employment	**1,300**	
APM, ITFs, and other Project Components	100	0.3%
CONRAC (existing rental car workforce)	1,200	0.0%

SOURCE: Flaming, Daniel, Ph.D., President, Economic Roundtable, Personal Communication, March 1, 2016.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

The 1,300 jobs required to operate the proposed Project would represent less than 1 percent of SCAG's employment forecast through year 2040 for jurisdictions within the Population and Housing Study Area (2,625,400 jobs). As implementation of the proposed Project is accounted for in SCAG's 2016–2040 RTP/SCS Growth Forecast, any indirect population or housing growth resulting from these employment opportunities would be reflected in the population forecast for jurisdictions entirely or partially included in the Population and Housing Study Area. The proposed Project's growth would thereby be consistent with the projected population, housing, and employment growth within the Population and Housing Study Area. Therefore, operational employment generated by the proposed Project would not indirectly induce population growth in the Population and Housing Study Area. Impacts would be less than significant.

4.10.5.1.2 Displace Substantial Numbers of Existing Housing

There are a total of 251 dwelling units remaining between the Belford and Manchester Square areas on the Project site. This represents approximately 0.02 percent of the total housing units for jurisdictions within the Population and Housing Study Area, which does not constitute a substantial amount of housing. These remaining dwelling units would be removed as part of the existing ANMP Relocation Plan for the Belford and Manchester Square areas with or without the proposed Project. The LAX Master Plan (and the EIR/EIS to support it) contemplated the continued relocation of these uses that are incompatible with Airport activities, including through eminent domain as needed.[49]

If the land acquisition under the existing ANMP Relocation Plan for the Belford and Manchester Square areas is not completed by commencement of construction, LAWA and the City of Los Angeles may be required to exercise the use of eminent domain to acquire these remaining properties. The acquisition of these properties would displace existing housing, but would be done so in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as well as California Government Code §7260, which establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a public entity. As shown in Table 4.10-1, in 2010, there were over 100,000 vacant housing units contained within jurisdictions in the Population and Housing Study Area. Thus, the proposed removal of up to 251 dwelling units would not result in the displacement of substantial numbers of existing housing that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.

4.10.5.1.3 Displace Substantial Numbers of Existing People

There are an estimated 530 residents associated with the remaining 251 dwelling units located in the Belford and Manchester Square areas. This represents approximately 0.01 percent of the population of jurisdictions within the Population and Housing Study Area, which does not constitute a substantial number of people. As previously discussed, the 251 remaining dwelling units and associated 530 residents would be removed as part of the existing ANMP Relocation Plan for the Belford and Manchester Square areas with or without the proposed Project. The LAX Master Plan (and the EIR/EIS to support it) contemplated the continued relocation of these uses that are incompatible with Airport activities, including through eminent domain as needed.

If the land acquisition under the existing ANMP Relocation Plan for the Belford and Manchester Square areas is not completed by commencement of construction, LAWA and the City of Los Angeles may be required to exercise the use of eminent domain to acquire these remaining properties. The acquisition of these properties would displace existing housing and people, but would be done so in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as well as California Government Code § 7260, which establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a public entity. However, those people displaced by the proposed Project would have the opportunity to reside within the 100,000 vacant housing units contained within jurisdictions in the Population and Housing Study Area.

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49 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.4.2, Relocation of Residences or Businesses,* April 2004.

Additionally, the Project site currently contains an existing homeless population of approximately 80 people.[50] The relocation of this existing homeless population would be required prior to the start of construction of the proposed Project. This homeless population would likely be absorbed into the nearby surrounding communities. As previously noted, the County and City of Los Angeles currently offer a variety of services and housing opportunities that would be available to the homeless population affected by the proposed Project. As part of the County and City of Los Angeles' initiatives to combat homelessness, LAHSA would continue to coordinate and fund such programs that provide shelter, housing, and services to homeless persons within the County and City of Los Angeles. Prior to start of construction activities, LAWA would coordinate with the City of Los Angeles to ensure the existing homeless population is aware of these available services and programs.

Construction of the proposed Project would also involve other enabling projects that would require demolition of several existing facilities, as shown in Table 2-12 These existing facilities currently support various industrial, commercial, and institutional uses that contain an existing workforce, which is included within the 2013 estimate of 33,200 employees located on the LAX Footprint. As described in Section 2.5, the majority of these facilities would be accommodated elsewhere on LAWA-owned property or within the Project vicinity. As such, the proposed Project would not displace a substantial number of existing employees on the LAX Footprint.

As identified in Table 4.10-15, the Stella Middle Charter and Bright Start Secondary Charter Academies are estimated to have a total of 33 FTE[51] staff. The relocation of these schools has been identified as part of LAWA's ongoing ANMP. LAWA has been coordinating closely with Bright Star to identify suitable relocation sites for the schools. Currently Bright Star is in negotiations for a property to house the Bright Star Secondary Charter Academy, and is considering a relocation for the middle school students in a neighboring school district. Because new facilities for these schools may not be available prior to construction of the proposed Project, LAWA may temporarily relocate the schools to Airport property located in the Northside Improvements area, as discussed in Section 2.5. The existing employees at the Stella Middle Charter and Bright Star Secondary Charter Academies would likely relocate to the new school sites and would not require a relocation of residency.

In summary, the relocation of remaining Belford and Manchester Square residents, the existing homeless population, and employees associated with the enabling projects would not displace substantial numbers of people that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.

4.10.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The potential future related development of new parcels needed for construction lay-down and staging areas would occur after construction of the proposed Project. The parcels proposed for potential future related

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50 Los Angeles Homeless Services Authority, "2015 Housing Counts by Census Tracts." Total homeless population estimate for the Belford and Manchester Square areas is based on U.S. Census tracts 2772.00 and 2774.00.

51 The full-time equivalent (FTE) is the number of hours worked by one employee on a full-time basis (40 hours per week).

development are located adjacent to the CONRAC, the ITF East, the APM Maintenance and Storage Facility (MSF), and the ITF West (see Figure 2-51). While there are no specific plans for development of these parcels at this time, the development of these parcels could eventually accommodate up to 900,000 sq. ft. of commercial development once the sites are no longer required for construction laydown activities or construction support for the Landside Access Modernization Program Project. When individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary, to determine potential impacts related to population and housing.

4.10.5.2.1 Induce Substantial Population Growth in an Area

As identified in **Table 4.10-18**, an illustrative commercial development is analyzed as 300,000 sq. ft. of office space, 300,000 sq. ft. (or approximately 400 rooms) of hotel space, 200,000 sq. ft. of general commercial space, and 100,000 sq. ft. of conference center space. Because the potential future related development would not include any residential uses, there would be no direct population or housing growth impacts.

Table 4.10-18: Potential Future Related Development Estimated Employment

POTENTIAL USE	AREA (SQ. FT.)	DENSITY FACTOR (SQ. FT./EMPLOYEE)	GENERATED EMPLOYMENT
Office Space	300,000	319	940
Hotel (approximately 400 rooms)	300,000	1,179 1/	254
Commercial Space	200,000	424	472
Conference Center	100,000	424	236
Total	**900,000**	**n/a**	1,902

NOTES:

n/a = Not available

1/ Average square feet per employee not available for Los Angeles County. Density factor based on median employees per acre from Table II-A of SCAG's, *Employment Density Study Summary Report*, October 31, 2001.

SOURCE: Southern California Association of Governments, *Employment Density Study Summary Report*, Table II-B, October 31, 2001.
PREPARED BY: Ricondo & Associates, Inc., April 2016.

As described in Section 4.12, *Transportation/Traffic*, various roadway and utility improvements are proposed during Phase 2 to support operations of the Project facilities and to provide efficient roadway circulation between the Project components and the potential future related development. Although the potential future related development would involve roadway and utility improvements to existing roads and infrastructure, it does not involve the extension of roads or other infrastructure into undeveloped areas. Therefore, the potential future related development would not indirectly induce population growth through the extension of roads or other infrastructure into undeveloped areas. However, the potential increase in employees associated with the potential future related development could result in indirect population growth in the area.

Based on SCAG employment density factors for these types of land uses, the potential future related development could generate up to approximately 1,902 employees on the Project site, as identified in Table 4.10-18. In a full-development scenario, maximum potential use of this land would occur by 2035; the increase in 1,902 employees on the Project site would represent less than 1 percent of SCAG's employment forecast through year 2040 for jurisdictions included in the Population and Housing Study Area (2,625,400 jobs). Therefore, employment generated by the potential future related development would be consistent with the projected employment growth for jurisdictions included in the Population and Housing Study Area.

For the evaluation of indirect growth impacts, the conservative scenario assumes that every new employee would relocate to the Population and Housing Study Area. As such, the indirect increase would result in a population increase of approximately 1,902 people to the Population and Housing Study Area. This population increase would represent less than 1 percent of SCAG's population forecast through year 2035 for the Population and Housing Study Area (5,986,900 people).

While the conservative scenario growth projections of the potential future related development would be consistent with SCAG projections, a majority of these new employees would likely commute from the local Los Angeles area. However, based on the conservative scenario, the approximate indirect housing growth associated with approximately 1,902 employees would be 1,902 housing units. This conservative scenario assumes that (1) the total number of jobs is equal to the same number of nonrelated individuals; (2) all individuals have a family size equivalent to the average household size within the Population and Housing Study Area (2.96 persons per household); and (3) all of the individuals and their families would relocate to the Population and Housing Study Area. This indirect housing growth would comprise less than 1 percent of the projected housing growth within the Population and Housing Study Area. Additionally, the indirect increase in approximately 1,902 employees could place a less than 2 percent demand on the approximately 100,000 vacant housing units within the Population and Housing Study Area, as identified by the U.S. 2010 Census. This potential increase in population could most likely be absorbed within the existing housing stock contained in the Population and Housing Study Area.

Therefore, the potential future related development would not indirectly induce population growth (for example, through extension of roads or other infrastructure or employment generators) in the Population and Housing Study Area. Impacts would be less than significant.

4.10.5.2.2 Displace Substantial Numbers of Existing Housing

The potential future related development projects would occur when no buildings are present on the available parcels. As such, implementation of the potential future related development would not remove any residential uses on the Project site, and would therefore not result in the displacement of substantial numbers of existing housing that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.

4.10.5.2.3 Displace Substantial Numbers of Existing People

As previously described above, the potential future related development would occur on undeveloped parcels and would not involve the removal of any residential uses on the Project site. Therefore, the potential future related development would not displace substantial numbers of people that would necessitate the construction of replacement housing elsewhere. Impacts would be less than significant.

4.10.6 CUMULATIVE IMPACTS

As discussed in Section 4.10.5, no direct population or housing would be generated as a result of the proposed Project. As shown in Table 3-1, numerous ongoing and probable future projects at LAX are within the immediate area of the proposed Project, including the Airport Metro Connector Station proposed by Metro. Similar to the proposed Project, none of these ongoing or future projects involve the construction of residential uses that would result in direct population or housing impacts nor would they displace substantial numbers of housing units or people. Table 3-2 lists numerous probable future projects in the LAX vicinity, some of which include residential units. However, because the proposed Project would not include residential units, it would not, in combination with the ongoing and probable future projects in the LAX vicinity, contribute to any cumulative direct inducement of substantial population growth in the Population and Housing Study Area. Cumulative impacts on direct population growth inducement would be less than significant.

Similarly, because the proposed Project would not displace substantial numbers of housing units or people, it would not, in combination with the ongoing and probable future projects in the LAX vicinity cause a cumulative displacement of substantial numbers of housing units or people.

The ongoing and probable future projects at LAX and in the LAX vicinity would generate construction employment that could indirectly induce population growth in the Population and Housing Study Area. New employees generated by the ongoing and probable future projects at LAX and the LAX vicinity, including the proposed Project, would likely commute from the local Los Angeles area and would not require relocation to the Population and Housing Study Area. As discussed in Section 4.10.5, the proposed Project would generate employment on the Project site, including approximately 20 to 2,500 construction jobs annually between years 2018 and 2031, and approximately 100 net jobs during operation, which would not result in significant construction-related impacts on population and housing. The SCAG 2016–2040 RTP/SCS forecasts that air passenger demand within the SCAG region will increase from 91.2 million annual passengers in 2014 to 136.2 million annual passengers by year 2040; representing a 1.6 percent annual growth rate. To accommodate air passenger growth, there would be an increase in airport-support jobs, including the ongoing and future projects at LAX, which would be approximately 47,000 employees by 2040 based on the 1.6 percent annual growth rate. Given that future growth of the Airport is accounted for in SCAG's 2016–2040 RTP/SCS, the proposed Project and the ongoing and future projects at LAX are included within SCAG's population, housing, and employment growth forecasts through year 2040 for jurisdictions included in the Population and Housing Study Area. Similarly, SCAG's 2016-2040 RTP/SCS includes population, housing, and employment growth forecasts for the areas where the probable future projects identified in Table 3-2 would occur. The proposed Project would not directly or indirectly cause growth that exceeds SCAG's population and housing growth forecasts. The proposed Project, in combination with the ongoing and probable future projects at LAX and in the LAX vicinity, would result in a less than significant cumulative impact on indirect population growth inducement.

4.10.7 MITIGATION MEASURES

As indicated in Section 4.10.5, impacts on population and housing with the implementation of the proposed Project would be less than significant; therefore, no mitigation measures are required.

4.10.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts on population and housing from the implementation of the proposed Project would be less than significant.

4.11 Public Services

This section presents an overview of the Project's impacts on fire protection, law enforcement, and public schools near the Project site. The impacts of the proposed Project on these public services are evaluated based on the adequacy of existing and planned facilities and personnel to meet any additional demand resulting from the proposed Project.

Prior to the preparation of this EIR, an Initial Study (included as **Appendix A** of this EIR) was prepared using the CEQA Environmental Checklist Form to assess potential public service impacts associated with the LAX Landside Access Modernization Program. As discussed in the Initial Study, the proposed Project does not include any residential development, schools, or park/recreation areas. The proposed Project would, however, require the acquisition of a Los Angeles Unified School District (LAUSD) parcel that currently contains two charter schools. Impacts related to these two charter schools are addressed below in Section 4.11.3, *Schools*, and in Section 4.8, *Land Use and Planning*. As explained in the Initial Study, the proposed Project would not result in a direct physical impact or alteration to any public park/recreation areas or other public facilities (such as libraries), and employment- and visitor-related demand for park/recreation areas and other public facilities would not require construction of new or physically altered parks or other public facilities. Therefore, impacts related to parks/recreation areas and other public facilities (such as libraries) do not require any additional analysis in this EIR.

4.11.1 FIRE PROTECTION

4.11.1.1 Introduction

This fire protection analysis addresses whether the proposed Project would increase demand for fire protection and emergency services at and adjacent to LAX. The following analysis addresses whether the proposed Project would result in facility capacity constraints or unacceptable emergency response times. Additional discussion of emergency response is provided in Section 4.6, *Hazards and Hazardous Materials*.

4.11.1.2 Methodology

Impacts on fire protection services were assessed by analyzing how the proposed Project would change fire protection services. Characterization of existing conditions includes a description of existing fire protection facilities, staffing, equipment levels, and response times. This information was obtained from the Los Angeles Fire Department (LAFD).

The fire protection study area is based on fire protection service area boundaries and incorporates the LAX property and areas surrounding LAX potentially affected by implementation of the proposed Project and potential future related development. The approach to evaluating impacts on fire services considers whether conditions under the proposed Project would meet key criteria set forth by LAFD, or required by the Los Angeles Fire Code (LAFC) or Federal Aviation Regulations (FARs).

The analysis presented in this section may incorporate relevant analyses and assumptions from the Specific Plan Amendment Study (SPAS) EIR,[1] the LAX Northside Plan Update EIR,[2] and the Bradley West Project EIR.[3] Fire protection services at LAX have been previously addressed in the aforementioned EIRs; therefore, the analysis procedures and data from these other projects were applied and updated as appropriate for the proposed Project.

4.11.1.3 Existing Conditions

4.11.1.3.1 Regulatory Setting

Federal Regulations

Federal regulations that apply to fire protection and emergency services include FARs and other requirements found in the Code of Federal Regulations (CFR). Federal agencies having jurisdiction over activities at LAX relating to fire protection and emergency services, such as the Federal Aviation Administration (FAA) and the U.S. Coast Guard, have regulations that are consistent with the National Fire Protection Association (NFPA) Code, which establishes fire safety provisions. **Table 4.11.1-1** includes a list of the most relevant applicable federal regulations, a summary of their provisions, and identification of the federal agencies with regulating authority.

Table 4.11.1-1: Fire Protection Federal Regulations

REGULATION	SUMMARY OF PROVISIONS	REGULATING AGENCY
Federal Aviation Regulations (FARs) 139.315 through 139.319	Aircraft Rescue and Fire Fighting (ARFF)	FAA
FAR 139.321	Hazardous substances that require safety training	FAA
FAR 139.325(f)	Requires Airport Emergency Plans to provide for Air/Sea Disaster Response	FAA/U.S. Coast Guard
FAR 139.325(4)	Airport response to natural disasters	FAA
U.S. Department of Labor 29 CFR 1910.38	Emergency action plans	FAA

NOTES:

FAA = Federal Aviation Administration CFR = Code of Federal Regulations

SOURCE: RS&H, October 2013.

PREPARED BY: Ricondo & Associates, Inc., July 2015.

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1 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles World Airports (LAX) Specific Plan Amendment Study,* Section 4.11.1, Fire Protection, July 2012.

2 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles World Airports (LAX) Northside Plan Update,* Section 4.12.1, Fire Protection, May 2014.

3 City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles World Airports (LAX) Bradley West Project,* September 2009.

Federal Aviation Regulations

FARs serve as the basis for LAWA's *LAX Rules and Regulations* manual[4], and the LAX Air/Sea Disaster Preparedness Plan discussed below. The fire and fire-related safety provisions found in these documents are also in accordance with applicable sections of the Uniform Fire Code (UFC) and/or the NFPA Codes and Standards. FARs mandate many aspects of emergency response services at LAX, including equipment types, personnel training, vehicle response times, and readiness.

Aircraft Rescue and Firefighting

Aircraft rescue and firefighting (ARFF) is regulated under FAR Sections 139.315 through 139.319. Handling and storage of hazardous substances and materials that require fire safety training in fuel farm and storage areas, and required compliance with locally adopted fire codes, are provided for under FAR 139.321. Under FAR 139.325, airport safety plans require coordination with firefighting services and provision of rescue vehicles large enough to handle the maximum persons carried aboard the largest aircraft that can be served. ARFF protocol requires apparatus to respond in 3 minutes or less from the position of the equipment to all areas within aircraft operating areas (FAR 139.319(h)). Should equipment become inoperable for a period exceeding 48 hours, the FAA requires that airport operations be limited to the response capability of equipment in operative condition unless waived by the FAA. The FAA-operated Airport Traffic Control Tower (ATCT) at LAX activates the emergency telephone system, which notifies airlines when the Airport is involved in safety-related operations. In addition, the ATCT coordinates runway assignments with LAX Airfield Operations personnel and stops all aircraft traffic on runways and taxiways that are adjacent to the scene of an emergency response, as required. Furthermore, LAWA has recommissioned an airline Fire Drill Training Facility on LAWA property, outside of the proposed Project area. Training at this facility includes live jet fuel fire-training exercises that comply with FAR Section 139.

Natural Disaster

When a natural disaster occurs, the President of the United States can declare a State of Emergency in response to, and in agreement with, a request from the Governor of the affected state. Emergency action plans are addressed in general by 29 CFR 1910.38, *Employee Emergency Plans,* and 29 CFR 1910.39*, Fire Prevention Plans*.

The requirement for airport natural disaster preparedness is regulated by FAR 139.325(4). It is the responsibility of the ATCT to issue a Notice to Airmen (NOTAM) in the event that the airport or any part of the airport is determined to be unsafe for landings or takeoffs. In addition, the ATCT verifies the navigational aid systems are operating.

The National Fire Protection Association Code

The NFPA has developed the NFPA Code, which establishes safety provisions for fire prevention and firefighting regulatory structures. The NFPA Code is incorporated into the fire protection and emergency

[4] City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

services operations of individual communities on a voluntary basis. Both LAWA and the City of Los Angeles incorporate the NFPA Code into their fire protection and emergency regulations and enforcement procedures. **Table 4.11.1-2** presents relevant sections of the NFPA Code that would apply to the LAX Landside Access Modernization Program.

Table 4.11.1-2 (1 of 3): Relevant Sections of National Fire Protection Association Code

SECTION	RELEVANT ITEMS
Motor Fuel Dispensing	
30A-5.2.4	All piping inside buildings but outside the motor fuel dispensing area shall be enclosed within a horizontal chase or a vertical shaft used only for this piping. Vertical shafts and horizontal chases shall be constructed of materials having a fire resistance rating of not less than 2 hours.
Indoor Fueling	
30A-7.3.3	In a motor fuel dispensing facility that is located inside a building or structure, the required number, location, and construction of means of egress shall meet all applicable requirements for special purpose industrial occupancies, as set forth in NFPA 101, Life Safety Code.
30A-7.3.5.2	Where required, an automatic fire suppression system shall be installed in accordance with the appropriate NFPA standard, manufacturer's instructions, and the listing requirements of the systems.
30A-7.3.6.1	The fuel dispensing area shall be separated from all other portions of the building by walls, partitions, floors, and floor–ceiling assemblies having a fire resistance rating of not less than 2 hours.
30A-7.3.6.2	Interior finish shall be of noncombustible materials or of approved limited-combustible materials, as defined in NFPA 220, Standard on Types of Building Construction.
30A-7.3.6.3	Door and window openings in fire-rated interior walls shall be provided with listed fire doors having a fire protection rating of not less than 1.5 hours. Doors shall be self-closing. They shall be permitted to remain open during normal operations if they are designed to close automatically in a fire emergency by means of listed closure devices. Fire doors shall be installed in accordance with NFPA 80, Standard for Fire Doors and Other Opening Protectives and kept unobstructed at all times.
30A-7.3.6.4	Openings for ducts in fire-rated interior partitions and walls shall be protected by listed fire dampers. Openings for ducts in fire-rated floor or floor–ceiling assemblies shall be protected with enclosed shafts. Enclosure of shafts shall be with wall or partition assemblies having a fire resistance rating of not less than 2 hours. Openings for ducts into enclosed shafts shall be protected with listed fire dampers.
30A-7.3.6.5	The fuel dispensing area shall be located at street level, with no dispenser located more than 15 m (50 feet) from the vehicle exit to, or entrance from, the outside of the building.
30A-7.3.6.6	The fuel dispensing area shall be limited to that required to serve not more than four vehicles at one time.
30A-7.3.6.7	A mechanical exhaust system that serves only the fuel dispensing area shall be provided. This section shall not apply to a fuel dispensing area located inside a building if two or more sides of the dispensing area are open to the building exterior.
30A-7.3.6.8	The floor of the dispensing area shall be liquid-tight. Where Class I liquids are dispensed, provisions shall be made to prevent spilled liquids from flowing out of the fuel dispensing area and into other areas of the building by means of curbs, scuppers, special drainage systems, or other means acceptable to the authority having jurisdiction.

Table 4.11.1-2 (2 of 3): Relevant Sections of National Fire Protection Association Code

SECTION	RELEVANT ITEMS
Fire Protection Systems	
130-5.7.2.3	Emergency alarm reporting devices shall be located on passenger platforms and throughout the stations such that the travel distance from any point in the public area shall not exceed 100 m (325 feet) unless otherwise approved.
130-5.10	Rubbish containers shall be manufactured of non-combustible materials.
Emergency Ventilation Systems	
130-7.1.2.2	A mechanical emergency ventilation system shall be provided in the following locations: 1. In an enclosed system station 2. In a system underground or enclosed tramway that is greater in length than 305 m (l,000 feet)
Emergency Exit Details	
130-6.2.2.2.2	For exit stairs serving underground or enclosed tramways, the width of exit stairs shall not be required to exceed 1120mm (44 in.).
130-6.2.12.1	Access to the tramway shall be from stations or by mobile ladder equipment from roadways adjacent to the trackway. If no adjacent or crossing roadways exist, access roads at a maximum of 762 m (2,500 feet) intervals shall be required.
130-6.2.8.2	Signs indicating station or portal directions shall be installed at maximum 25 m (82 feet) intervals on either side of the underground or enclosed tramways.
Egress for Passengers	
130-6.2.1.9	The means of egress within the tramway shall be provided with an unobstructed clear width graduating from the following: 1. 610 mm (24 inches) at the walking surface to 2. 760 mm (30 inches) at 1420 mm (56 inches) above the walking surface and to 3. 610 mm (24 inches) at 2025 mm (80 inches) above the walking surface
130-6.2.1.10.1	Raised walkways that are more than 760 mm (30 inches) above the floor or grade below shall be provided with a continuous guard to prevent falls over the open side.
130-6.2.2.2	Within underground or enclosed tramways, the maximum distance between exits shall not exceed 762 m (2500 feet).
130-5.5.6.1.1	The maximum travel distance on the platform to a point at which a means of egress route leaves the platform shall not exceed 100 m (325 feet).
130-5.5.6.3.1.1	A minimum clear width of 1120mm (44 inches) shall be provided along all platforms, corridors, and ramps serving as means of egress.
130-5.5.1.3	At least two means of egress remote from each other shall be provided from each station platform.
130-5.5.1.4	A common path of travel from the platform ends shall not exceed 25 m (82 feet) or one car length, whichever is greater.
130-5.5.6.1	There shall be sufficient egress capacity to evacuate the platform occupant load from the station platform in 4 minutes or less.
130-5.5.6.1.1	The maximum travel distance on the platform to a point at which a means of egress route leaves the platform shall not exceed 100 m (325 feet).
130-5.5.6.3.2.1	Stairs in the means of egress shall be a minimum of 1120 mm (44 inches) wide.
130-5.5.6.3.4.1	Doors and gates in the means of egress shall have a minimum clear width of 910 mm (36 inches).

Table 4.11.1-2 (3 of 3): Relevant Sections of National Fire Protection Association Code

SECTION	RELEVANT ITEMS
130-5.5.6.3.4.4	Gate-type exits shall be provided for at least 50 percent of the required emergency exit capacity unless fare collection equipment provides unobstructed exiting under all conditions.
130-5.6.2.1	Emergency lighting for stairs and escalators shall be designed to emphasize illumination on the top and bottom steps and landings.
	Traction Power
130-6.4.2.4	Coverboards, where used, shall be capable of supporting a vertical load of 1125 N (250 lb.) at any point with no visible permanent deflection.
130-6.4.3.2	Power conductor(s) (DC or AC which supply power to the vehicle for propulsion and other loads) shall be secured to insulating supports, bonded at joints, and protected to prevent contact with personnel.
130-6.5.1.1	Heat and smoke detectors shall be installed at traction power substations and signal bungalows and shall be connected to the operations control center.
130-6.5.1.2	Signals received from such devices shall be identifiable as to origin of signals.
130-6.2.7.1	Blue light stations shall be provided at the following locations: • the ends of station platforms; • at cross-passage ways; • at emergency access points; • at traction power substations; and • in underground tramways, as approved.
130-6.2.7.2	Adjacent to each blue light station, information shall be provided that identifies the location of that station and the distance to an exit in each direction.

NOTES:

NFPA = National Fire Protection Association

NFPA 30A = Code for Motor Fuel Dispensing Facilities and Repair Garages

NFPA 130 = Standard for Fixed Guideway Transit and Passenger Rail Systems

CFR = Code of Federal Regulations

SOURCE: National Fire Protection Association Code, 2013.
PREPARED BY: Ricondo & Associates, Inc., July 2015.

State Regulations

California Public Utilities Commission

The California Public Utilities Commission (CPUC) prescribes safety and security requirements for the design, construction, operation, and maintenance over fixed guideway rail systems within the State.[5] The CPUC would be the regulating authority over the Automated People Mover (APM), pursuant to CPUC General Orders 127, 143-B, and 164-D. CPUC would review and approve a System Safety Program Plan and Security Plan for the proposed APM.

5 California Public Utilities Commission, "Rail Transit Safety and Security," Available: http://www.cpuc.ca.gov/rtsb/, accessed March 2016.

State of California Uniform Fire Code

The State of California UFC sets the framework for fire protection and safety within California. The UFC contains several sections that provide authority and standards that pertain to operations at airport facilities.

- **Fire Fighting Authority.** Article 2 provides standards for the organization, authority, duties, and procedures for firefighting. Division I (Organization and Authority), Section 2.105 provides for the exercise of police powers by firefighters. Division II (Duties and Procedures), Section 2.201 provides for fire inspection and characterizes what can be declared an unsafe building.
- **Fire Access.** Article 10 (Fire Protection Systems and Equipment), Division II (General Provisions), Section 10.207 specifies access roadway requirements for fire apparatus. Article 12 (Maintenance of Means and Egress and Emergency Escapes), Section 12.109, provides standards for stair, ramp, and escalator enclosures.
- **Air Service Operations.** Article 24 provides standards for airports, heliports, and helistops in Division I (General), Sections 12.013 (Dispensing Flammables or Combustible Liquids), 12.104 (Transferring Fuel), 24.105 (Application of Flammable or Combustible Liquid), and 24.111–24.116, which provide aircraft service and repair standards. Provisions for safety standards of fuel system maintenance and use is provided in Article 24, Division II (Refueler Units), Sections 24.202 (Operation Maintenance and Use of Aircraft Refueler) and 24.203 (Fueling and Defueling); Article 79 (Flammable and Combustible Liquids), Division I (General), Section 79.114 (Fire Protection); Division II (Container and Portable Tank Storage Inside Buildings), Section 79.205 (Fire Protection); and Division VI (Tank Storage Underground, Outside or Under Buildings), Section 79.511 (Fire Protection).

Office of Emergency Services Mutual Aid Plan

The California Fire Service and Rescue Emergency Mutual Aid System is managed by the Governor's Office of Emergency Services (OES). The OES Mutual Aid Plan for the California Fire Service and Rescue Mutual Aid System[6] outlines procedures for establishing mutual aid agreements at the local, operational, regional, and state levels, and divides the state into six regions to facilitate the coordination of mutual aid; LAFD is located in Region I. Through the Emergency Mutual Aid system, the OES is informed of conditions in each geographic and organizational area of the state, and the occurrence or imminent threat of disaster. All OES Mutual Aid Plan participants monitor a dedicated radio frequency for fire events that are beyond the capabilities of the responding fire department and provide aid in accordance with the management direction of the OES.

California Building Code

The California Building Code contains provisions for fire protection systems for commercial buildings. Relevant sections of the California Building Code are provided in **Table 4.11.1-3**.

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6 Governor's Office of Emergency Services, Fire and Rescue Division, *California Fire Service and Rescue Emergency Mutual Aid Plan,* December 2014.

Table 4.11.1-3 (1 of 3): Relevant Sections of California Building Code

SECTION	RELEVANT ITEMS
Fire Protection Systems	
903.2.17.1	Automatic sprinkler system. An automatic sprinkler system shall be installed in all stations of fixed guideway transit systems.
905.3.10	Standpipe systems. Underground stations shall be provided with a class III standpipe system designed to comply with the following: • Automatically supply 65 pounds per square inch (psi) for each outlet. • Supply a 250 gallons per minute (gpm) (946 L/m) flow to each of the two most remote 2-1/2 inch (64 mm) outlets when pressurized through the fire department connection(s).
907.2.26	Fixed guideway transit systems fire alarm and communication systems. Every fixed guideway transit station shall be provided with an approved emergency voice/alarm communication system in accordance with NFPA 72. The emergency voice/alarm communication system shall be designed and installed so that damage to any one speaker will not render any paging zone of the system inoperative.
907.2.26.2	System components. Each station fire alarm system shall consist of: • Fire alarm control unit at a location as permitted by the enforcing agency. • An alarm annunciator(s). The annunciator(s) shall be located at a point acceptable to the enforcing agency. The annunciator(s) shall indicate the type of device and general location of alarm. All alarm, supervisory, and trouble signals shall be transmitted to the local annunciator(s) and the operations control center. • Manual fire alarm boxes shall be provided throughout passenger platforms and stations. • Automatic smoke detectors in all ancillary spaces.
907.2.26.3	Emergency voice/alarm communication system. Each station shall be provided with an emergency voice/alarm communication system capable of transmitting voice, recorded or electronically generated textual messages to all areas of the station. The system(s) shall be configured such that the messages can be initiated from either the Emergency Management Panel (EMP) or the Operations Control Center (OCC).
907.2.26.4	Emergency telephones. A dedicated two-way emergency communication phone system designed and installed in accordance with NFPA 72 shall be provided in all underground stations to facilitate direct communications for emergency response between remote locations and the EMP. 1. Remote emergency phones shall be located at ends of station platforms, each hose outlet connection and station valve rooms. 2. Provisions shall be made in the design of this two-way emergency communication phone system for extensions of the system to the next passenger station or guideway portal.
910.3.4	Heat Vent locations. Smoke and heat vents shall be located 20 feet (6.1 m) or more from adjacent lot lines and fire walls and 10 feet (3.0 m) or more from fire barriers. Vents shall be uniformly located within the roof in the areas of the building where the vents are required to be installed by Section 910.2 with consideration given to roof pitch, draft curtain location, sprinkler location, and structural members.
910.4.1	Mechanical smoke exhausts location. Exhaust fans shall be uniformly spaced and the maximum distance between fans shall not be greater than 100 feet (30.5 m).
906.9	Extinguisher installation. The installation of portable fire extinguishers shall be in accordance with Sections 906.9.1 through 906.9.3. 1. Extinguishers weighing 40 pounds or less. Portable fire extinguishers having a gross weight not exceeding 40 pounds (18 kg) shall be installed so that their tops are not more than 5 feet (1.5 m) above the floor. 2. Extinguishers weighing more than 40 pounds. Hand-held portable fire extinguishers having a gross weight exceeding 40 pounds (18 kg) shall be installed so that their tops are not more than 3.5 feet (1.1 m) above the floor. 3. Floor clearance. The clearance between the floor and the bottom of installed hand-held portable fire extinguishers shall not be less than 4 inches (102 mm).

Table 4.11.1-3 (2 of 3): Relevant Sections of California Building Code

SECTION	RELEVANT ITEMS
912.2	Fire department connections location. With respect to hydrants, driveways, buildings, and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved by the fire chief.
912.3.2	Clear space around connections. A working space of not less than 36 inches (762 mm) in width, 36 inches (914 mm) in depth and 78 inches (1981 mm) in height shall be provided and maintained in front of and to the sides of wall-mounted fire department connections and around the circumference of free-standing fire department connections, except as otherwise required or approved by the fire chief.
Emergency Ventilation Systems	
433.4.5.1	Emergency ventilation shall be provided for enclosed and underground stations for the protection of passengers, employees and emergency personnel.
433.4.5.3	Ventilation shaft terminals at-grade shall be located to prevent recirculation as follows: • Openings for blast relief shafts, and under platform and smoke exhaust shafts at-grade shall be separated by a minimum horizontal distance of 40 feet (12.2 m) from any station entrance, elevator hoistway enclosure, surface emergency stair doorway, unprotected outside air intake or other opening, or from each other. Exhaust outlets that are not used for intakes may be adjacent to each other. • Where this distance is not practical, the horizontal distance may be reduced to 15 feet (4.6 m) if the closest blast relief or under platform and smoke exhaust shaft terminal is raised a minimum of 10 feet (3.0 m) above the station entrance, emergency stair doorway and unprotected outside air intake or other opening, or the under platform and smoke exhaust shaft terminal is raised a minimum of 10 feet (3.0 m) above the blast relief shaft terminal. • Ventilation of stations shall not terminate at grade on any vehicle roadway.
433.4.5.5	Emergency ventilation control. Local controls shall override remote control. Local control shall be capable of operating the fans in all modes in the event the remote controls become inoperative.
433.4.5.6	Ventilation systems and ancillary areas. Ancillary area ventilation systems shall be arranged so that air is not exhausted into station public occupancy areas.
Emergency Exit Details	
433.3.2	Exits required. Stations shall have at least two exits placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the station. • Enclosed station platforms shall have a minimum of one exit within 20 feet (6.1 m) from each end. • Underground station platforms shall have a minimum of one enclosed exit within 20 feet (6.1 m) from each end. Minimum Number of Exits for Occupant Load Occupant Load (persons per story) — Minimum Number of Exits (per story) 1–500 — 2 501–1,000 — 3 More than 1,000 — 4
433.3.2.2.2	There shall be sufficient means of exit to evacuate the station occupant load from the station platforms in four minutes or less.
433.3.2.2.3	The station shall also be designed to permit evacuation from the most remote point on the platform to a point of safety in six minutes or less.
433.3.5	Distance to exits. No point of the station platform(s) or mezzanine(s) shall be more than 300 feet (91.4 m) from a point of safety.

Table 4.11.1-3 (3 of 3): Relevant Sections of California Building Code

SECTION	RELEVANT ITEMS
433.3.6	Other exits required/guideway access. Access/egress between guideway and platforms shall be provided as follows: • Stairs or ramps, 2 feet 10 inches (0.9 m) in width minimum, or other arrangement having equivalent capacity, shall be provided at each end of the platform, arranged to provide access/egress to guideway level. • Except in underground stations, the access points between the guideway and the platform, and the exit from the platform may be integrated.
1011.1	Exit Signs. Exit sign placement shall be such that no point in an exit access corridor or exit passageway is more than 100 feet (30.5 m) or the listed viewing distance for the sign, whichever is less, from the nearest visible exit sign.
1011.3	Tactile exit signs. Tactile exit signs shall be required at the following locations: • Each grade-level exterior exit door shall be identified by a tactile exit sign with the word, "EXIT." • Each exit door that leads directly to a grade-level exterior exit by means of a stairway or ramp shall be identified by a tactile exit sign. • Each exit door that leads directly to a grade-level exterior exit by means of an exit enclosure that does not utilize a stair or ramp, or an exit passageway shall be identified by a tactile exit sign. • Each exit access door from an interior room or area shall be identified by a tactile exit sign. • Each exit door through a horizontal exit shall be identified by a tactile exit sign.
1013.1	Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side.
1015.1.1	The exit doors or exit access doorways shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors or exit access doorways. Interlocking or scissor stairs shall be counted as one exit stairway.
1027.3	Exit discharge location. Exterior balconies, stairways and ramps shall be located at least 10 feet (3.0 m) from adjacent lot lines and from other buildings on the same lot unless the adjacent building exterior walls and openings are protected in accordance with Section 705 based on fire separation distance.
Egress for Passengers	
1003.2	Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2.3 m).
1003.4	Floor surface. Walking surfaces of the means of egress shall have a slip-resistant surface and be securely attached.
1006.2	Illumination level. The means of egress illumination level shall not be less than 1 foot-candle (11 lux) at the walking surface.
1007.10	Directional signage. Directional signage indicating the location of the other means of egress and which accessible means of egress are available shall be provided at the following: • At exits serving a required accessible space but not providing an approved accessible means of egress. • At elevator landings. • Within areas of refuge.

SOURCE: California Building Standards Commission, *2013 California Building Code, Chapter 4, Special Detailed Requirements on Use and Occupancy, Chapter 9, Fire Protection Services, Chapter 10, Means of Egress,* January 1, 2014.
PREPARED BY: Ricondo & Associates, Inc., July 2015.

County Regulations

Operational Area Emergency Response Plan

The Disaster Preparedness Section of the Los Angeles County Sheriff's Department (LACSD), Emergency Operations Bureau, conducts active disaster/emergency planning with other public and private organizations, including all incorporated cities within the County, the American Red Cross, and various public and private civil defense/disaster-planning entities. The County of Los Angeles is also required to organize a formal mutual aid agreement between all fire departments within its jurisdiction. Additional informal agreements may be made directly between the fire departments involved. The County's Operational Area Emergency Response Plan[7] describes the mutual aid system established in accordance with the California Emergency Services Act, which provides personnel and resources to assist other member agencies during emergency and/or conditions of extreme peril.

Local Regulations

The City of Los Angeles establishes fire protection and emergency services regulations for both on- and off-Airport property. On-Airport areas are subject to provisions included in the *LAX Rules and Regulations* manual,[8] LAX Airport Emergency Plan (AEP), the City of Los Angeles General Plan Safety Element, and the LAFC. Accidents involving an air carrier which occur in the immediate vicinity of LAX over water are subject to the provisions of the LAX Air/Sea Disaster Preparedness Plan.

LAX Rules and Regulations

LAWA's *LAX Rules and Regulations* manual is published under authority contained in Sections 632(b) and 633(a) and (b) of the Los Angeles City Charter, which empowers LAWA to make rules and regulations governing the use and control of City airports, subject to the powers of the United States respecting commerce. The *LAX Rules and Regulations* manual complies with FAA FAR Part 139 and the Transportation Security Administration (TSA) Transportation Security Regulation (TSR) Parts 1540 and 1542, which require airport management to establish operational and safety procedures and measures to meet FAA and TSA requirements for airport certification.[9]

Section 6, Fire and Safety, of the *LAX Rules and Regulations* manual specifically applies to fire safety at LAX. The Airport Fire Inspector is required to inspect all buildings, structures, and premises periodically, as well as enforce all applicable laws, rules, and regulations regarding fire protection, including the UFC, NFPA Codes and Standards, and the LAFC.[10]

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7 County of Los Angeles, *Los Angeles County Operational Area Emergency Response Plan*, *Section 4, Mutual Aid System*, June 2012, Available: http://www.lacoa.org/oaerp.htm.

8 City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

9 City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

10 City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

LAX Airport Emergency Plan

LAWA is required, based on FAA guidance provided in Advisory Circular 150/5200-31C, to have an AEP for LAX to address essential emergency-related and deliberate actions to ensure safety and the provision of adequate emergency services for LAX and surrounding communities.[11] The AEP details the roles and responsibilities that first responders, airport managers, commercial carriers, and airport tenants are to undertake in an emergency.[12] However, for airport security and safety reasons, this document is not a public document.

City of Los Angeles General Plan Safety Element

The General Plan Safety Element,[13] adopted on November 26, 1996, contains policies related to the City's response to hazards and natural disasters. Policy 2.1.6 requires LAFD to maintain, enforce, and upgrade requirements, procedures, and standards to facilitate effective fire suppression including peak-load water flow and building and fire code regulations. In addition, LAFD is required to revise regulations or procedures to include the establishment of minimum standards for the location and expansion of fire facilities based on flow, intensity, and type of land use, life hazards, occupancy, and degree of hazards to ensure adequate fire and emergency medical service (EMS) response.

Los Angeles Fire Code and Charter

The provisions of the LAFC are detailed in Section 57.09.01-11, Article 7 (Fire Protection and Prevention) of Chapter V (Public Safety and Protection) of the Los Angeles Municipal Code (LAMC). As stated therein, the LAFD Bureau of Fire Prevention and Public Safety is required to administer and enforce basic building regulations set by the State Fire Marshal. The LAFC also provides regulations for the safeguarding of life and property from fire, explosion, panic, or other hazardous conditions that may arise in the use or occupancy of buildings, structures, or premises. Division 101 of the LAFC regulates fire and life safety for all airports, heliports, aircraft factories, aircraft hangars, and aircraft repair hangars. Further, this Division regulates the ground fuel servicing of all types of aircraft with petroleum fuels.

Section 520 of the Los Angeles City Charter requires LAFD to control and extinguish injurious or dangerous fires and remove that which is liable to cause those fires; enforce all ordinances and laws relating to the prevention or spread of fires, fire control, and fire hazards within the City; conduct fire investigations; and protect lives and property in case of disaster or public calamity.

Maximum response distances pursuant to the LAFC between a project site and a first-in engine company or a truck company (those companies staffed for, and equipped with, an aerial ladder truck) vary with the fire flow requirements, as shown in **Table 4.11.1-4**.

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11 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5200-31C, *Airport Emergency Plan,* June 19, 2009, as amended November 3, 2010.

12 City of Los Angeles, Mayor's Blue Ribbon Panel, *Report of the Mayor's Blue Ribbon Panel on Airport Security: A Report to Los Angeles Mayor Antonio R. Villaraigosa Concerning Public Safety at Los Angeles International Airport,* June 2011.

13 City of Los Angeles, Department of City Planning, *Safety Element of the Los Angeles City General Plan*, adopted November 26, 1996.

Table 4.11.1-4: Service Radii in Miles by Required Fire Flow

TYPE OF LAND USE	REQUIRED FIRE FLOW (GALLONS PER MINUTE)	ENGINE COMPANY SERVICE RADII (MILES)	TRUCK COMPANY SERVICE RADII (MILES)
Low-Density Residential	2,000 GPM from three adjacent fire hydrants flowing simultaneously	1.0–1.5	2.0
High-Density Residential and Neighborhood Commercial	4,000 GPM from four adjacent fire hydrants flowing simultaneously	1.0–1.5	2.0
Industrial and Commercial	6,000–9,000 GPM from four to six fire hydrants flowing simultaneously	1.0	1.0–1.5
High-Density Industrial and Commercial	12,000 GPM available to any block	0.75	1.0

NOTE: GPM = gallons per minute

SOURCE: City of Los Angeles, *City of Los Angeles Fire Code*, Chapter 5, Article 7, Section 507.3, Fire Flow, 2014.
PREPARED BY: Ricondo & Associates, Inc., March 2016.

4.11.1.3.2 Existing Facilities

The LAFD provides fire protection services throughout LAX and the proposed Project site. As of January 2015, the LAFD Emergency Services Bureau is divided into four geographic bureaus.[14] These bureaus divide the City into the Central, West, Valley, and South Bureaus. Each of these bureaus is commanded by a Deputy Chief who reports directly to the Chief Deputy of Emergency Operations. The Deputy Chief and associated staff are responsible for all LAFD activities within their respective bureaus.[15] The Project site falls within the boundaries of the LAFD's West Bureau, Battalion 4, which serves the City of Los Angeles communities of Mar Vista and Westchester, and LAX.[16] Fire Station 82, located in Hollywood at 1800 N. Bronson Avenue, serves as the main office for the West Bureau.

While LAFD stations have jurisdiction and primary responsibility for serving LAX, both the OES Mutual Aid Plan and the County of Los Angeles Mutual Aid Operations Plan ensure that LAX would receive supplemental personnel and resources during a major emergency and conditions of extreme peril. Currently, the City of El Segundo is the only jurisdiction adjacent to LAX that provides mutual aid support to the Airport through an additional mutual aid agreement. The City of El Segundo provides fire response backup and EMS to the City

[14] Los Angeles Fire Department, "LAFD Implements New Bureau Command Structure," January 12, 2015, Available: http://www.lafd.org/news/lafd-implements-new-bureau-command-structure.

[15] Los Angeles Fire Department, "LAFD Implements New Bureau Command Structure," January 12, 2015, Available: http://www.lafd.org/news/lafd-implements-new-bureau-command-structure.

[16] Los Angeles Fire Department, Departmental Organization Bureau, "Map 105," January 12, 2015.

of Los Angeles upon request; in turn, the LAFD provides fire trucks and personnel to the City of El Segundo if requested in the event of a major incident.[17]

As shown in **Figure 4.11.1-1**, five fire stations serve the Project site and surrounding vicinity: Fire Stations 5, 51, 67, 80, and 95. The equipment, existing facilities, and personnel for the stations that serve the Project site are summarized in **Table 4.11.1-5**. The LAFD is currently required to respond to structural fires and EMS incidents within a maximum time of 5 minutes and 20 seconds and 5 minutes, respectively.[18] Traffic congestion and construction delays within the Central Terminal Area (CTA) and along S. Sepulveda Boulevard pose constraints on the LAFD to meet these response time standards.[19]

Fire Station 80 responds to incidents at LAX only, and not to incidents within the neighboring communities, unless there is an aircraft incident off airport property. In addition to LAX, Fire Stations 5 and 95 serve portions of the neighboring communities and Fire Station 51 serves Dockweiler State Beach.[20] Fire Stations 5 and 67 provide structural fire backup to on- and off-Airport fire stations. Fire Stations 5, 51, 67, and 95 provide fire protection services in compliance with the LAFC.[21]

Fire Station 80 serves as an ARFF station and houses the LAFD's specialized airport firefighting response equipment.[22] Fire Station 80 is the only on-Airport fire station that is mandated to meet 3-minute response times to airfield emergencies in accordance with ARFF requirements.[23] Other FAR Part 139.315 through 319 requirements address sufficient rescue and firefighting personnel capable of meeting response times, minimum fire suppressant agent discharge rates, and maintenance of emergency access roads. Fire Station 80 currently meets all ARFF requirements in compliance with FAR Part 139.315 through 319.

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17 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

18 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

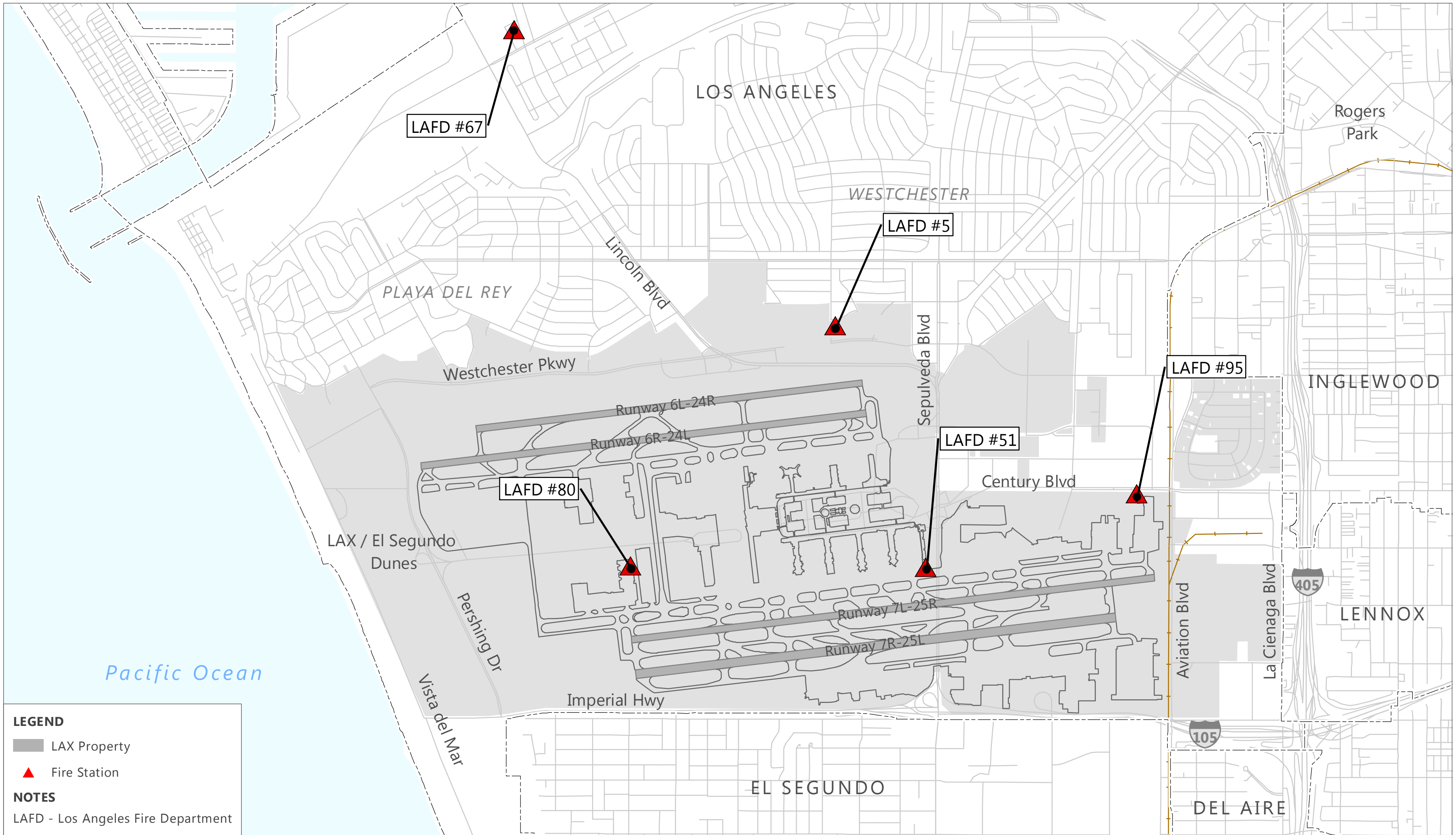
19 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

20 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

21 City of Los Angeles, *City of Los Angeles Fire Code*, Section 57.09.01-11.

22 City of Los Angeles, Mayor's Blue Ribbon Panel, *Report of the Mayor's Blue Ribbon Panel on Airport Security: A Report to Los Angeles Mayor Antonio R. Villaraigosa Concerning Public Safety at Los Angeles International Airport,* June 2011.

23 14 Code of Federal Regulations, Part 139.319(h)(2)(i), Aircraft Rescue and Firefighting: Operational Requirements.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets, Land Uses); Los Angeles County, L.A. County GIS Data Portal, County Data, Accessed Online, August 2014; LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.11.1-1

Public Services
Fire Station Locations

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Table 4.11.1-5: City of Los Angeles Fire Department Stations Serving Project Site

STATION #	ADDRESS	FLOOR AREA (SF)	SERVICE AREA (SQUARE MILES)	STAFF [1/]	EQUIPMENT
5	8900 Emerson Avenue	24,700	4.33	15/43	1 USAR vehicle 2 fire engines 1 fire truck 1 paramedic rescue ambulance 1 battalion chief vehicle
51	10435 S. Sepulveda Boulevard	8,600	4.55	6/18	1 fire engine 1 paramedic rescue ambulance 1 rescue apparatus
67	5451 Playa Vista Drive	15,000	4.20	6/18	1 paramedic assessment fire engine 1 basic life support rescue ambulance
80	7250 World Way West	27,500	LAX Air Operations Area	16/48	4 specialized fire trucks 1 reserve truck 1 stair truck 1 pickup
95	10010 International Road	9,500	2.46	12/36	1 truck with 100-foot ladder 1 fire engine pumper 1 paramedic rescue ambulance 1 rescue air cushion HazMat unit
Totals		**85,300**		**55/163**	

NOTE:

1/ Per shift/total

SOURCES: Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 22, 2015.
PREPARED BY: Ricondo & Associates, Inc., January 2016.

Fire Station 5, at a size of 24,700 square feet, is located at 8900 Emerson Avenue and serves a 4.33 square-mile area that includes LAX as well as areas off the Airport, including portions of City of Los Angeles communities of Westchester, Loyola Village, Playa del Rey, and Vista del Mar. Fire Station 5 contains a truck company; an engine company; and equipment for a standby Urban Search and Rescue (USAR) Team, with personnel trained to respond as a USAR unit.[24] In 2015, Fire Station 5 had an average response time for EMS

[24] USAR is considered a multihazard discipline because it may be needed for a variety of emergencies or disasters, including earthquakes, hurricanes, typhoons, storms and tornadoes, floods, dam failures, technological accidents, terrorist activities, and hazardous materials releases.

of 5 minutes 5 seconds at a distance of 1.4 miles.[25] Fire Station 5 serves as the Emergency Incident Technician (EIT) headquarters for LAFD's Battalion 4.[26] During peak travel periods, such as major holidays (approximately two to three times per year), the LAFD utilizes a temporary bike medic patrol team as a function of the station's response team.[27] Positioned within the CTA, the bike medic patrol team provides Emergency Medical Technicians (EMTs) and first-aid support in lieu of transporting passengers off-site to the Reliant Urgent Care facility, located at 9601 S. Sepulveda Blvd. The bike medical patrol team is currently stationed at Fire Station 5 with response routes located within the CTA and the immediate surrounding area.

Located at 10435 S. Sepulveda Boulevard, Fire Station 51 is 8,600 square feet and serves a 4.55 square-mile area, including Dockweiler State Beach and the majority of LAX property. Fire Station 51 provides the primary medical response to the CTA and gate areas, as well as aircraft interior attack support to Fire Station 80 when needed. In 2015, Fire Station 51 had an average response time for EMS of 5 minutes 15 seconds at a distance of 0.4 mile.[28]

Fire Station 67, at a size of approximately 15,000 square feet, is located at 5451 Playa Vista Drive and serves a 4.20 square-mile area primarily within the City of Los Angeles community of Playa Vista. Fire Station 67 contains a paramedic assessment fire engine and a basic life support rescue ambulance and provides advanced life support EMS. In 2015, Fire Station 67 had an average response time for EMS of 5 minutes and 15 seconds at a distance of 3.9 miles.[29] Due to its close proximity to LAX, Fire Station 67 provides backup assistance to on- and off-Airport incidents, as needed.[30]

Fire Station 95 is located at 10010 International Road and serves a 2.46 square-mile area, including the Manchester Square area and the eastern portion of the Airport property. Fire Station 95 is a multi-company fire station that also houses equipment for the standby Hazardous Material (HazMat) company, with personnel trained to respond as a HazMat unit.[31] In 2015, Fire Station 95 had an average response time for EMS of 4 minutes 6 seconds at a distance of 1.0 mile.[32] At 9,500 square feet, Fire Station 95 is currently at capacity and has no physical room for growth nor can it accommodate an increase in staff.[33] While Fire

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25 Los Angeles Fire Department, "FireStatLA: Station 5 Response Metrics for 2015," Available: http://lafd.org/fire_stations/fire-stat-la, accessed March 2016.

26 Los Angeles Fire Department, Departmental Organization Bureau, "Map 105," January 12, 2015.

27 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

28 Los Angeles Fire Department, "FireStatLA: Station 51 Response Metrics for 2015," Available: http://lafd.org/fire_stations/fire-stat-la, accessed March 2016.

29 Los Angeles Fire Department, "FireStatLA: Station 67 Response Metrics for 2015," Available: http://lafd.org/fire_stations/fire-stat-la, accessed March 2016.

30 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

31 HazMat teams respond in the event of a chemical or dangerous toxin or a bomb threat emergency. LAFD will dispatch a HazMat specialized apparatus, with firefighters who are specially trained for handling dangerous chemicals.

32 Los Angeles Fire Department, "FireStatLA: Station 95 Response Metrics for 2015," Available: http://lafd.org/fire_stations/fire-stat-la, accessed March 2016.

33 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

Station 95 serves as the HazMat responder within the Project area, it does not have enough HazMat personnel on-site to operate the HazMat company.[34] A HazMat Unit requires a staff of 12 members (4 members per 24-hour shift).[35] As such, HazMat cross-trained firefighters are drawn from nearby stations, such as Fire Stations 51 and 80, to support existing HazMat Unit operations out of Fire Station 95.[36]

To address limitations with existing Fire Station 95, a new fire station is being considered by LAWA to consolidate Fire Stations 51 and 95 for future development on the Airport's east side at a site yet to be determined.[37] This dual functionality would increase LAFD's ARFF and fire/EMS capabilities on the Airport and surrounding areas. At this time, there is no schedule for implementation of the new consolidated fire station.

The overall number of EMS incidents in the City of Los Angeles in 2013 was 705,786, averaging 1,112 incidents per day.[38] The number of off-Airport emergency incidents in 2015 responded to by the fire stations serving the Project site is provided in **Table 4.11.1-6.** The combined number of off-Airport emergency incidents responded to by Fire Stations 5, 51, 67, and 95 in 2015 was just below 11,000. The average response time from these four fire stations ranged from 4 minutes six seconds to 5 minutes 15 seconds. The average response time from Fire Station 80 (which only responds to incidents at LAX) in 2015 was 3 minutes.[39]

LAFD considers fire protection staffing and equipment to be adequate throughout the Project site and the service areas covered by Fire Stations 5, 51, 67, 80, and 95.[40] All five fire stations maintain adequate equipment and personnel to meet the response times required to support LAX airside operations and landside uses under existing conditions.

In addition to the five fire stations that provide service to LAX, an Airport Response Coordination Center (ARCC) was completed by LAWA in 2010, which increased and streamlined LAX's operational efficiency and crisis management capabilities. The ARCC provides 24-hour centralized coordination support to manage the Airport's many operations, and integrates tenant and governmental agency activities. During a critical incident, the ARCC continues to manage airport activities that are slightly affected or unaffected by the incident. During a major incident or airport emergency, the Incident Management Center (IMC) at the ARCC is activated, calling in additional personnel to specifically respond to the event, secure the incident, and provide for the recovery of impacted operations until the Airport resumes normal operations.[41]

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34 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

35 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

36 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

37 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

38 Los Angeles Fire Department, "Our Mission," Available: http://www.lafd.org/about/about-lafd/our-mission, accessed August 2016.

39 Fire Station Number 80 is the only airport station that is mandated to meet three-minute response times for airfield emergencies per FAR ARFF requirements; therefore, LAFD does not have any response metrics for this station.

40 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

41 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

Table 4.11.1-6: Emergency Incidents Response (2015) - City of Los Angeles Fire Department Stations Serving the Project Site

STATION #	NUMBER OF INCIDENTS (OFF-AIRPORT)	RESPONSE DISTANCE (MILES) 1/	AVERAGE RESPONSE TIME
5	2,263	1.4	5:05
51	5,375	0.4	5:15
67	1,891	3.9	5:15
80 2/,3/	N/A	1.9	3:00
95	1,443	1.0	4:06
Totals	**10,972**		**4:54**

NOTES:

1/ Calculated from World Way and Sepulveda Boulevard for all structures located within the Project site.

2/ Fire Station Number 80 only responds to incidents at LAX, not within the neighboring communities, unless there is an aircraft incident off the Airport property.

3/ Fire Station Number 80 is the only on-Airport station that is mandated to meet three-minute response times to airfield emergencies in accordance with ARFF requirements.

SOURCES: Los Angeles Fire Department, "FireStatLA," Available: http://lafd.org/fire_stations/fire-stat-la, accessed March 2016
PREPARED BY: Ricondo & Associates, Inc., March 2016.

Emergency access for the LAFD to the Project site is provided by the existing street systems. As shown in Figure 4.11.1-1, LAFD primarily utilizes S. Sepulveda Boulevard, W. Century Boulevard, Airport Boulevard, Aviation Boulevard, S. La Cienega Boulevard, W. Manchester Avenue, and Westchester Parkway/W. Arbor Vitae Street as the emergency access routes within the Project area.[42] Additionally, Fire Station 5 utilizes the W. 96th Street/Sky Way Bridge as a travel route to and from the CTA. Traffic congestion and construction delays are currently the primary factors affecting LAFD's ability to efficiently respond to incidents within the CTA.

4.11.1.4 Thresholds of Significance

A significant impact on fire protection and emergency services would occur if the proposed Project would result in one or more of the following conditions:

- Restricted emergency access, increased response times, extended station response distances, or decreased fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities.
- Requires, but does not adequately provide for, the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels.

42 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, November 30, 2015.

These thresholds of significance were utilized because they address the concerns for fire protection services associated with the proposed Project; namely, emergency access, response times, station response distances, and fire flow. These thresholds were derived from the *L.A. CEQA Thresholds Guide*.[43] Additionally, the first threshold reflects the LAFC (LAMC, Section 57.09.01-11).[44]

4.11.1.5 Impact Analysis

4.11.1.5.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project. The Phase 2 program features (potential future related development) are discussed separately.

Construction Impacts on Emergency Access and Response Times

Construction of the proposed Project would alter ground access throughout the Project site. Traffic congestion associated with construction of the proposed Project could delay the LAFD's emergency response activities by impeding the movement of emergency vehicles. Construction activities would include temporary and intermittent local roadway and/or lane closures along W. Century Boulevard, S. Sepulveda Boulevard, Westchester Parkway/W. Arbor Vitae Street, Airport Boulevard, Aviation Boulevard, W. 96th Street, W. 98th Street, and S. La Cienega Boulevard. These roadway closures could result in an increase in response times for fire protection personnel.

Construction of the proposed roadway improvements would contribute to increases in traffic congestion at various locations within the Project site until the year 2024, when the majority of the roadway improvements would be completed. The LAFD's average response times in and around the Project site may increase as a result of the response distance and traffic conditions, particularly for Fire Stations 5, 51, 67, and 95. As Fire Station 80 primarily responds to incidents at LAX only, its existing response activities are unlikely to be affected by construction of the proposed Project. Moreover, removal of the W. 96th Street/Sky Way Bridge may also impact the ability for Fire Station 5 to as quickly respond to incidents within the CTA. Traffic congestion would improve after 2024; however, the remaining roadway improvements would not be completed until 2035. Therefore, the phased implementation of these roadway improvements by 2024 and 2035 could delay emergency access within the Project site, which would be a significant impact.

LAWA would coordinate with the LAFD regarding emergency access and other design needs to ensure that fire protection service levels are maintained during construction. In the event construction activities were to result in deterioration of traffic conditions, LAFD would continue to implement use of emergency sirens, alternate response routes, and coordinated station responses to help facilitate emergency access and response. Additionally, the LAFD may utilize its temporary bike medic patrol teams during construction of the

43 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

44 According to LAFD and LAMC, Section 57.09.01-11, an engine company should be located within 1.0 mile and a truck company should be located within 1.5 miles of an emergency location while meeting fire flow requirements.

proposed Project as a result of various road closures. This temporary mobile support would allow the LAFD to adequately provide emergency response within the CTA.

Construction of the proposed Project could result in accidents at staging areas (see Figure 2-50) and a temporary increase in risk to vehicles, bicycles, and pedestrians located adjacent to construction areas. This increased potential for accidents would result in an increased burden on the LAFD for EMS response. However, construction activities would adhere to regulatory safety requirements in accordance with the UFC, NFPA Codes and Standards, and the LAFC, which would minimize the number of accidents requiring EMS response from LAFD.

Construction of the proposed Project would also involve various site preparation and demolition activities, grading, and construction. As a result, construction activities may result in conflicts with existing underlying utility infrastructure throughout the Project area. As discussed in Section 4.6, *Hazards and Hazardous Materials,* and Section 4.13, *Utilities and Service Systems*, LAWA would implement plans during construction that would assure that any upset impact related to utility conflicts would be less than significant. These plans would include confirming, through the City of Los Angeles Bureau of Engineering permit office or through pre-excavation utilities surveys, the exact location of utilities, prior to construction.

However, while LAWA would coordinate with LAFD, construction of the proposed Project could delay the LAFD's emergency response activities by restricting emergency access and increasing response times. Impacts would be significant.

Operations

Emergency Access and Response Times

Emergency access throughout the Project site would be provided by the existing and proposed street systems. The LAFD utilizes S. Sepulveda Boulevard, W. Century Boulevard, Airport Boulevard, Aviation Boulevard, S. La Cienega Boulevard, and Westchester Parkway/W. Arbor Vitae Street as emergency access routes. The proposed Project would include various improvements to roadways that serve the CTA and the proposed Intermodal Transportation Facilities (ITFs), APM Maintenance and Storage Facility (MSF), and Consolidated Rental Car Facility (CONRAC), as identified in Section 2.4.4. These proposed improvements would involve new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, modified freeway ramps, new or realigned driveways, roadway closures, and intersection improvements. The proposed Project would also include pedestrian sidewalks to direct pedestrian movement off the roadways. As discussed in Section 4.12.1 and 4.12.2 of *Transportation/Traffic*, implementation of these roadway improvements would reduce traffic congestion and the demand for curb-fronts, which would reduce potential for automobile accidents and automobile/pedestrian conflicts, and other automobile-related emergency response incidents at the Airport. Improved traffic flow associated with the proposed Project would improve response times for the LAFD over time. As such, the proposed roadway improvements would not restrict emergency access, increase response times, or extend station response distances. Impacts would be less than significant.

As part of the proposed Project, roadway improvements would be implemented along eastbound W. Century Boulevard. Fire Station 95, located at 10010 International Road, currently fronts W. Century Boulevard along its northern boundary. The City of Los Angeles' review of the proposed street widths, street lighting, and street signage would include an evaluation of requirements for the provision of emergency access. The proposed roadway improvements along W. Century Boulevard would be coordinated with the City to ensure compliance. While these proposed roadway improvements would occur adjacent to Fire Station 95, the station's existing setback would not be affected. As such, impacts associated with restricting emergency access, increasing response times, or extending station response distances would be less than significant.

Currently, urgent care to passengers and employees located within the CTA is provided either by LAFD bike medic patrol teams, which provide EMTs and first-aid support in lieu of transporting passengers off-site, or by transporting non-emergency patients to the Reliant Urgent Care facility, located at 9601 S. Sepulveda Blvd. Concentra also operates an Urgent Care facility at 6033 W. Century Boulevard. As identified in Chapter 2, *Description of the Proposed Project*, the Reliant Urgent Care facility would be relocated to either another portion of LAWA property, potentially north of Lincoln Boulevard, or Reliant Urgent Care would relocate to an off-Airport location. This could increase LAFD's travel time to the Urgent Care facility. Emergency care would continue to be provided at one of the area hospitals (Marina del Rey Hospital at 4650 Lincoln Boulevard or Kindred Hospital at 5525 W Slauson Avenue). Although the Reliant Urgent Care facility would be relocated, relocation would not restrict emergency access, increase response times, or extend station response distances in the area, because the Reliant Urgent Care does not provide these services. Impacts would be less than significant.

Fire Flows and Station Response Distances

The proposed Project would require the provision of fire flows per the City of Los Angeles' requirements for the type of development proposed. Based on the development types included in the proposed Project, the required fire flow would be 6,000 to 9,000 gallons per minute from four to six hydrants flowing simultaneously.[45] The LAMC maximum response distance for a required flow of 6,000 to 9,000 gallons per minute is 1 mile for an engine company and 1.5 miles for a truck company.[46] Currently, Fire Station 95 provides service to the Airport and Project area and operates an engine and truck company, and is located within 1 mile of the proposed CONRAC, ITFs, and the majority of the APM system and within 1.5 miles of the entire APM system. Fire Station 51, an engine company, is located within 1 mile of the proposed APM system located within the CTA; thus, between Fire Stations 51 and 95, the entire Project area is sufficiently served by existing fire protection services. Therefore, operation of the proposed Project would not extend station response distances or decrease fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities.

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45 City of Los Angeles, *City of Los Angeles Fire Code*, Chapter 5, Section 507.3.1, *Fire-Flow Requirements*.

46 City of Los Angeles, *City of Los Angeles Fire Code*, Chapter 5, Section 507.3.3, *Land Use*.

Operational Impacts of Individual Project Components

Fire Station 95, which is located within the Project site boundaries, would be the first responder to most incidents, with support as needed from the nearby stations. Each of the new facilities introduced by the proposed Project may contribute demand for fire protection services by passengers, employees, and other persons utilizing these facilities. As discussed in Section 4.10, *Population and Housing*, operation of the proposed Project would include a net increase of approximately 100 employees, potentially resulting in an increase in emergency incidents within the Project site. Because the proposed Project involves the consolidation of existing jobs within the area, primarily in association with rental car facilities in the CONRAC, the 100 new employees are not likely to substantially increase the number of emergency incidents on the proposed Project site. However, operation of the proposed Project components would not have a significant impact on fire protection. A further discussion of fire protection impacts for selected proposed Project components is provided below.

Automated People Mover

The APM system would involve the operation of multiple automatic and driverless trains along a 2.25-mile long guideway at a height of between 50 and 70 feet above grade. There would be six stations along the guideway, as well as vertical circulation cores and pedestrian walkways connecting the guideway to the stations. The operation of the APM system would contribute demand for LAFD services due to the activity of Airport passengers, visitors, employees, and other persons utilizing the system. However, as identified in Chapter 2, *Description of the Proposed Project,* the proposed Project would incorporate fire safety features in compliance with fire and building code requirements identified in Section 4.11.1.3.

In the event of an APM failure (i.e., loss of power), the LAFD would be the first responder. The height of the elevated guideway could pose accessibility constraints depending on the location of the incident, and subsequently affect response times. The LAFD would access the APM with a 100-foot ladder from Fire Station 95; however, this may be difficult due to variations in elevation, topography, and the street network operating underneath the guideway. As an alternative, the LAFD suggested during a meeting to discuss the proposed Project, the construction of a parallel pedestrian platform alongside the APM to allow ease of access for emergency personnel and passengers. The APM guideway, as proposed, and in compliance with CPUC requirements, would have an emergency walkway along the entire guideway which would provide egress for passengers in the event of an emergency as well as access for emergency personnel, which serves the same purpose as a parallel pedestrian platform requested by LAFD.

The APM system would have six stations, each of which would be equipped with stairs and emergency access in accordance with fire and building code requirements identified in Section 4.11.1.3. The APM system would also be equipped with an electronic communications system connected to each APM car and station, which can be used to communicate with passengers and employees in the event of equipment malfunction, system delays, or emergencies.

Other components of the APM system include the APM MSF and three or more traction power substations. The MSF would be constructed east of the ITF West and would be an elevated structure with tracks into the structure matching the height of the APM guideway. In order to support the operations and maintenance of the APM operating system, limited quantities of hazardous materials, such as oils, lubricants, paints, and other petroleum-based substances would be used within the MSF. The traction power substations would house equipment such as transformers, rectifiers, cabling, and switchgear. The use and storage of these hazardous materials and equipment would be in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Each of these support facilities would comply with fire and building code requirements identified in Section 4.11.1.3 by providing adequate emergency access and incorporating fire safety features.

APM system operations would not restrict emergency access, increase response times, extend station response distances, or decrease fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities. The APM system would also not require the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels. Therefore, operation of the APM system would have a less than significant impact on fire protection and emergency services.

Intermodal Transportation Facilities

The proposed Project includes the West and East ITFs, which are buildings that could provide airport amenities, commercial amenities, ticketing/information kiosks, and multi-level parking garages. The operation of the ITFs would contribute demand for LAFD services due to the activity of Airport passengers, visitors, employees, and other persons utilizing the facilities at these locations. However, the ITFs would include multiple ingress and egress points for emergency access, as well as other fire safety features including fire hydrants, fire sprinklers, and fire extinguishers. As identified in Chapter 2, *Description of the Proposed Project,* the proposed ITFs would include fire safety features in compliance with fire and building code requirements identified in Section 4.11.1.3.

Neither the ITF East nor the ITF West operations would restrict emergency access, increase response times, extend station response distances, or decrease fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities. The ITFs would also not require the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels. Therefore, operation of the ITFs would have a less than significant impact on fire protection and emergency services.

Consolidated Rental Car Facility

The proposed CONRAC would include approximately 6 million square feet of floor space between 3- to 4-stories, and would consist of a Customer Service Building (CSB), Rental Car Ready/Return Parking Area, a Vehicle Storage Area, and a Quick Turnaround Area (QTA). The CSB and Rental Car Ready/Return Parking Area would be occupied primarily by rental car customers and employees. The Vehicle Storage Area would be an overflow parking area and the QTA would provide facilities for multi-level fueling, washing, and vehicle maintenance.

Operation of the CONRAC would involve the use and storage of hazardous materials, such as oils, lubricants, and other petroleum-based substances. However, these materials and uses are present within the existing rental car facilities that would be relocated to the CONRAC. Fire Station 95 is currently under capacity constraints and cannot staff its on-site HazMat company without assistance from supporting stations (see

Section 4.11.1.3.2). The CONRAC would result in the relocation of off-site rental car operations to a centralized facility at LAX. The centralized facility would result in the transfer of a portion of these existing rental car operations, such as fueling, quick-turnaround, customer service, and short-term storage. The rental car companies may retain their off-site locations for long-term storage, continued heavier maintenance, and other activities not transferred to the CONRAC facility. Additionally, because some of the existing rental car agencies are located in Inglewood, there would be an increase of hazardous materials within LAFD's jurisdiction. As such, operation of the proposed CONRAC would increase the HazMat and response requirements of Fire Station 95.

While Fire Station 95 serves as the HazMat responder within the Project area, it does not have enough HazMat personnel on-site to operate the HazMat company.[47] A HazMat Unit requires a staff of 12 members (4 members per 24-hour shift).[48] As such, HazMat cross-trained firefighters are drawn from nearby stations, such as Fire Stations 51 and 80, to support existing HazMat Unit operations out of Fire Station 95.[49] While the HazMat and response requirements of Fire Station 95 would increase to serve CONRAC operation, Fire Station 95 would continue to utilize cross-trained firefighters from Fire Stations 51 and 80 to support existing HazMat Unit operations.

The design of the CONRAC, including the CSB, Rental Car Ready/Return Parking Area, and Vehicle Storage Area would incorporate all required fire safety and design features in accordance with the LAFC. The proposed QTA would consist of two three-level buildings with an estimated total of 192 fueling positions. As originally proposed, operations inside the two QTA buildings would not meet the following NFPA 30A indoor fueling requirements identified in Table 4.11.1-2:

- **7.3.6.5:** The fuel dispensing area shall be located at street level, with no dispenser located more than 15 m (50 feet) from the vehicle exit to, or entrance from, the outside of the building.
- **7.3.6.6:** The fuel dispensing area shall be limited to that required to serve not more than four vehicles at one time.

In February 2016, LAWA submitted a Request for Modification (RFM) of the LAFC to the LAFD to allow operation of the QTA and indoor fueling as proposed. Based on discussions with LAFD,[50] revisions were made to the February 2016 RFM and resubmitted to the LAFD on April 26, 2016, and is still in process. As noted in the April 26, 2016 revised RFM, the proposed Project would incorporate various design features, such as increased fire suppression features, extension of electrical hazard areas, installation of emergency warning lights, accessible fire control rooms, integrated drainage, and an increased number of emergency stop buttons and egress paths (i.e., emergency stairs). Additionally, the QTA buildings would be designed with open architecture to increase exhaust ventilation throughout the facilities. Double-walled steel piping would be

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47 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

48 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

49 Ulrich, Dean, Assistant Chief, LAWA Fire Operations Officer, Los Angeles Fire Department, Personal Communication, December 1, 2015.

50 Email correspondence with Mr. Pat Tomcheck, Los Angeles World Airports, June 2, 2016.

constructed within the buildings to serve as a secondary containment in the event of a fire. Overall, the CONRAC design would include fire-resistant components that would provide a level of protection equal to or greater than specified by the LAFC. LAWA is working closely with the Los Angeles Department of Building and Safety (LADBS) to determine the appropriate building occupancy classifications for the CONRAC buildings, which would dictate any additional fire/life safety requirements. With the proposed features, the proposed Project would meet the regulatory intent of minimizing fire hazard risks, and impacts on fire protection services from indoor fueling operations in the CONRAC would be less than significant.

Operation of the CONRAC would not restrict emergency access, increase response times, extend station response distances, or decrease fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities. It would also not require the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels. Therefore, operation of the CONRAC would have a less than significant impact on fire protection and emergency services.

4.11.1.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The proposed Project would require changes to the configuration of existing parcels owned by LAWA that would create new parcels, which would be used for construction laydown and staging areas (see Figure 2-51). After construction, there is the potential for future development of these new parcels for up to 900,000 sq. ft. of commercial uses. The new uses resulting from the development of these parcels would increase the demands on LAFD services. Over time, this could result in the need for additional staffing, equipment, or the expansion, consolidation, or relocation of an existing facility to maintain fire protection and emergency services.

Development of individual future related projects may require temporary and/or partial street closures due to construction activities. Such closures would have the potential to increase demand on LAFD services, or impair emergency access to/from the future project site. However, any such closures would be temporary in nature and would be coordinated with the City of Los Angeles Departments of Transportation (LADOT), Building and Safety, and Public Works. Additionally, prior to the issuance of any building permits, consultation with the LAFD regarding any potential road closures would be required. As such, impacts to emergency access and response times related to construction and operation of potential future related development would be less than significant.

At this time, there are no specific plans for development of the proposed newly created parcels. As individual development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Developers of all potential future related development would be required to coordinate with the LAFD, incorporate fire safety features, and comply with fire and building code requirements described in Section 4.11.1.3.1. Therefore, operations of future related development projects would not restrict emergency access, increase response times, extend station response distances, decrease fire flow beyond the standards maintained by the agencies serving LAX, or require the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels. Therefore, this impact is considered less than significant.

4.11.1.6 Cumulative Impacts

As discussed in Section 4.11.1.5, the proposed Project would alter ground access to, from, and around LAX, which has the potential to impair the movement of emergency vehicles. While local roadway and/or lane closures would occur for varying periods during construction, roadway access would be maintained by the use of detours and traffic lane reconfigurations. These closures would have the potential to result in an increase in response times for fire protection personnel, which could result in a significant impact with regards to emergency access and response times for fire protection and emergency services.

Cumulative projects at and adjacent to LAX forecasted to be constructed concurrent with implementation of the proposed Project facilities are identified in Table 3-1 and probable future projects are identified in Table 3-2. As with the proposed Project, developers of other development projects at/adjacent to the proposed Project site, including the Airport Metro Connector (AMC) 96th Street Transit Station, would be required to coordinate temporary and/or partial street closures with the LAFD prior to issuance of building permits. Impacts to emergency access routes and response times could still occur from construction of cumulative projects if emergency access routes and local road closures are not closely coordinated. As a result, construction of the proposed Project in combination with cumulative projects could exacerbate construction-related traffic delays and impair emergency access and increase response times, which would be a significant cumulative impact. Although LAWA would coordinate with LAFD to minimize the impact of the proposed Project on emergency response during construction, the proposed Project's contribution to significant cumulative impacts on emergency access and response times during construction would be cumulatively considerable.

As discussed in Section 4.11.1.5, operation of the proposed Project would have a less than significant impact on fire protection and emergency services. On-airport cumulative projects listed in Table 3-1, including terminal improvement projects and the LAX Northside Development, in combination with the proposed Project, have the potential to increase demand for fire and emergency services. As with the proposed Project, all development projects on LAX would be required to include multiple ingress and egress points for emergency access, as well as other fire safety features including fire hydrants, fire sprinklers, and fire extinguishers, in compliance with fire and building code requirements identified in Section 4.11.1.3.

The LAX Northside project would also add new development that would increase demand for fire protection and emergency services. The LAX Northside project would be reviewed through standard City processes to ensure compliance with the fire and building code requirements identified in Section 4.11.1.3. In addition, measures that address fire protection are incorporated in the development requirements for the LAX Northside Sub-Area in the LAX Specific Plan.

Regarding cumulative off-Airport projects, the development of the Metro Crenshaw/LAX Transit Corridor and Stations, including the proposed AMC 96th Street Transit Station would introduce new rail facilities in the Airport vicinity, with a corresponding potential increase in demand for fire and emergency services. Metro would implement system safety program plans and system security plans, which would address the safety and security of transit commuter operations, mitigate accidents, and support compliance with state regulations.[51] These safety measures have been established to provide employee and passenger safety, crime prevention, adequate emergency response, and emergency procedures. In addition, the proposed stations would be designed to promote pedestrian safety and would be adequately lit and monitored by security personnel.

As discussed in Section 4.12.1 and 4.12.2 of *Transportation/Traffic,* implementation of the proposed Project roadway improvements would reduce traffic congestion in and around the area which would reduce potential for automobile accidents and automobile/pedestrian conflicts, and other automobile-related emergency response incidents at the Airport. Improved traffic flow associated with the proposed Project would improve response times for the LAFD over time. The Metro Crenshaw/LAX Transit line would similarly have the potential to reduce traffic congestion in and around the Airport which would be a beneficial cumulative impact.

Based on the above analysis, operation of the proposed Project, in combination with other development projects at/adjacent to LAX would not restrict emergency access, increase response times, extend station response distances, or decrease fire flow beyond the standards maintained by the agencies serving LAX and the surrounding communities. Moreover, cumulative development would not result in the need for a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain adequate service levels. Therefore, cumulative impacts on fire protection services would be less than significant.

4.11.1.7 Mitigation Measures

As indicated in Section 4.11.1.5, impacts related on fire protection and emergency response services during construction would be significant. The following mitigation measures are proposed to reduce this significant impact.

- **MM-ST (LAMP)-1. Construction Traffic Project Task Force.** LAWA would establish a Project Task Force specific to the LAX Landside Access Modernization Program to coordinate deliveries, monitor traffic conditions, advise motorists about detours and congested areas, and monitor and enforce delivery times and routes. The Project Task Force could be comprised of key stakeholders from LAWA, the Coordination and Logistic Management Team (CALM), other City departments, and others as deemed appropriate. This Project Task Force would review traffic management plans to mitigate traffic impacts on public roadways and the CTA where possible. The Project Task Force would review the traffic management plans and work plans to ensure:
    - Coordination with all other LAWA construction projects;
    - Coordination with other public infrastructure projects;
    - Detour impact analysis for pedestrian, business, bicycle, and traffic flow;

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51 Los Angeles County Metropolitan Transportation Authority (Metro), *Crenshaw/LAX Transit Corridor Project Final Environmental Impact Statement/Final Environmental Impact Report*, August 2011, p. 4-267 and p. F-65.

- Coordinate closures and restricted access with all potential special events and holiday traffic flow
- Notification to the public with use of static signage, changeable message signs, media announcements, Airport website, etc.;
- Work with LAWA police and the Los Angeles Police Department to enforce delivery times and routes;
- Coordinate with police and fire personnel regarding maintenance of emergency access and response times;
- Monitor and coordinate deliveries;
- Establish detour routes;
- Work with residential and commercial neighbors regarding upcoming construction activities; and
- Analyze traffic conditions to determine the need for additional traffic signals, signs, lane restriping, signal modifications, etc.

The Project Task Force would develop a comprehensive and long-term communication and construction impact outreach strategy for implementation during construction. The Task Force would work closely with other LAWA departments, including Public Relations, Planning and Development, and Operations. The Task Force would also ensure that an innovative and effective construction outreach and communication strategy is developed to keep key stakeholders, businesses, and residents notified and informed during construction of the proposed Project.

Prior to initiation of construction, contractors would be required to complete Worksite Traffic Control Plans (WTCP). The WTCP would include a description of how the contractor will manage all construction-related traffic. The WTCP would 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 WTCP would require approval of the Project Task Force as well as any appropriate agencies and departments. Contractor compliance would be monitored throughout the duration of their contract. LAWA would require contractors to implement and comply with the following WTCP measures to reduce construction-related traffic impacts associated with projects at LAX, including:

<u>Designated Truck Delivery Hours</u>

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. Peak Airport traffic periods occur throughout most of the day, therefore, to the extent possible, truck delivery hours shall be limited to overnight hours from 1:00 a.m. to 9:00 a.m.

Designated Truck Routes

For dirt, aggregate, bulk cement, and all other materials and equipment, truck deliveries would be on designated routes only (freeways and non-residential streets).

Designated truck routes are limited to:

- Aviation Boulevard (Imperial Highway to Manchester Boulevard)
- Manchester Boulevard (Aviation Boulevard to I-405)
- Florence Avenue (Aviation Boulevard to I-405)
- La Cienega Boulevard (north of Imperial Highway)
- Pershing Drive (Westchester Parkway to Imperial Highway)
- Westchester Parkway (Pershing Drive to Sepulveda Boulevard)
- Century Boulevard (Sepulveda Boulevard to Aviation Boulevard)
- Sepulveda Boulevard (Westchester Parkway to Imperial Highway)
- Imperial Highway (Pershing Drive to I-405)
- I-405
- I-105

Stockpile Locations

All stockpile locations must be pre-approved by LAWA. Stockpile locations/laydown/staging areas shall be accessed by construction vehicles with minimal disruption near residential neighborhoods.

- **MM-ST (LAMP)-2. Maintenance of Traffic.** To ensure that continued vehicular access to community facilities is maintained, the contractor shall provide at least one lane of traffic in each direction on access cross streets that are not going to be dead-ended during construction. If one lane of traffic cannot be maintained, the contractor shall provide a detour route for motorists.
- **MM-ST (LAMP)-3. Worksite Traffic Control Plans.** Before the start of construction, Worksite Traffic Control Plans (WTCP) and Traffic Circulation Plans, including identification of detour requirements, will be formulated in cooperation with the affected municipalities and other jurisdictions (County, State) in accordance with the Work Area Traffic Control Handbook (WATCH) manual and the California Manual on Uniform Traffic Control Devices (MUTCD)[52] as required by the relevant municipality. The WTCPs will be based on lane requirements and other special requirements defined by the Los Angeles City Department

[52] California State Transportation Agency, Department of Transportation, *California Manual on Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California*, 2014 Edition (including Revision 1), November 7, 2014.

of Transportation (LADOT), the affected municipalities for construction within their City and from other appropriate agencies for construction in those jurisdictions. The WTCP's shall be designed to maintain designated Safe Routes to School wherever possible during times of the year when nearby schools are in session. The WTCP's shall be reviewed and coordinated with the LAWA Project Task Force 30 days in advance of any restriction or closure.

- **MM-ST (LAMP)-4. Roadway Closure Restrictions.** No designated major or secondary highway will be closed to vehicular or pedestrian traffic except at night or on weekends, unless approval is granted by the jurisdiction in which it is located.
- **MM-ST (LAMP)-5. Traffic Maintenance During Construction.** The following would be implemented during construction when the Project Task Force and appropriate City departments or local jurisdictions deem necessary:
  - A flagperson shall be placed at the truck entry and exit from the Project site.
  - Deliveries and pick-ups of construction materials shall be scheduled during non-peak travel periods to the degree possible and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
  - Access shall remain unobstructed for land uses in proximity to the Project site during construction.
  - Unless otherwise specified in the WTCP, the contractor shall maintain access to the businesses that rely on on-street parking and pedestrian access during construction. If it is necessary to temporarily restrict access to a business, the contractor shall provide the facility advance notice of restrictions. Unless otherwise specified in the WTCP, the contractor shall schedule access restrictions to off-peak hours or during times when the business is closed and shall not fully restrict access for the total hours of operation of business on any given day of operation.
  - Relative to maintaining access to businesses, construction activities shall be sequenced to minimize the temporary removal of multiple blocks of on-street parking at one time unless otherwise specified by the WTCP.
  - Contractors shall use temporary special signage to inform the public of closure information in advance of temporary closures. Signage shall also provide special access directions, if warranted.
  - Notice of closure will be prepared by the contractor with legible maps and reviewed prior to dissemination by the Project Task Force.
  - A construction management plan shall be developed by the contractor and will be implemented during construction, to include the following:
  - Establish requirements for the loading, unloading, and storage of materials on the Project site
  - Coordinate with the City and emergency and safety service providers to ensure adequate access is maintained to the project site and neighboring businesses.
  - In addition to the mitigation measures identified above, the contractor would be required to comply with City and local jurisdiction guidelines and regulations.

4.11.1.8 Level of Significance after Mitigation

With implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5, the proposed Project's significant impacts on fire protection and emergency services would be reduced to a level that is less than significant, and less than cumulatively considerable, because these measures would facilitate effective coordination with LAFD to meet its standards and requirements, and through Project Task Force implementation would ensure the availability emergency access and adequate response times during all construction phases.

4.11.2 LAW ENFORCEMENT

4.11.2.1 Introduction

The law enforcement analysis addresses whether the proposed Project would increase demand for law enforcement services at and adjacent to LAX to an extent that could result in inadequate staffing levels or facilities, or unacceptable response times. While a number of federal agencies have law enforcement–related responsibilities at LAX, this section is largely focused on the primary law enforcement providers at the Airport, namely, the Los Angeles World Airports Police Division (LAWAPD) and LAPD.

4.11.2.2 Methodology

Impacts on law enforcement services were assessed by analyzing how the proposed Project would change law enforcement services. Characterization of existing conditions includes identification of pertinent regulations that apply to law enforcement services at LAX and a summary of current staffing and facility space for LAPD and LAWAPD.

The law enforcement study area includes LAX property, property acquisition areas, and areas surrounding LAX property that could otherwise be affected by implementation of the proposed Project. The approach to evaluating impacts on law enforcement services is largely based on whether conditions under the proposed Project would result in unacceptable staffing levels or facilities based on requirements and standards set forth by LAPD and LAWAPD.

The analysis presented in this section uses relevant analyses and assumptions from the SPAS EIR [53], the LAX Northside Plan Update EIR[54] and the Bradley West Project EIR.[55] Law enforcement services in the study area have been previously addressed in the aforementioned EIRs; therefore, the analysis procedures and data from these other projects were applied and updated as appropriate for the proposed Project.

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53 City of Los Angeles, Los Angeles World Airports, *Draft Environmental Impact Report for Los Angeles International Airport (LAX) Specific Plan Amendment Study,* Section 4.11.2, Law Enforcement, July 2012.

54 City of Los Angeles, Los Angeles World Airports*, Draft Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update,* Section 4.12.2, Police Protection, May 2014.

55 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.

4.11.2.3 Existing Conditions

4.11.2.3.1 Regulatory Setting

Federal Regulations

United States Code of Federal Regulations Title 14 (14 CFR), Part 139, and Title 49 (49 CFR) TSR, Parts 1540 and 1542, require LAX to establish operational safety and security procedures to meet Department of Homeland Security TSA and FAA certification requirements for LAX. These regulations serve as the basis for LAWA's *LAX Rules and Regulations* manual.

The FAA is the agency of the U.S. government with primary responsibility for the safety of civil aviation. The FAA issues and enforces regulations and minimum standards covering the manufacture, operation, and maintenance of aircraft. The agency is responsible for the rating and certification of aircraft personnel and airport certification. The TSA was created in response to the terrorist attacks of September 11, 2001, as part of the Aviation and Transportation Security Act signed into law in November 2001. The TSA issues and administers TSRs, which are codified in 49 CFR, Parts 1500 through 1699. Many TSRs are former rules of the FAA that were transferred to TSA when the TSA assumed the FAA's civil aviation security function in February 2002. These regulations contain rules that cover all segments of civil aviation security, and require airport operators to adopt and carry out a security program approved by the TSA.

Regulations related to immigration, customs, agricultural protection, and counterterrorism are regulated and enforced by the U.S. Customs and Border Protection (CBP) and the U.S. Immigration and Customs Enforcement (ICE). Drug enforcement and various criminal enforcement activities at LAX, including international as well as national issues, are regulated by the Federal Drug Enforcement Administration (DEA) and the Federal Bureau of Investigation (FBI).

State Regulation

The Penal Code of California forms the basis for the application of criminal law in California. All law enforcement agencies within the State of California are organized and operated in accordance with the applicable provisions of the California Penal Code, which, among other things, sets forth the authority, rules of conduct, and training for peace officers. All sworn municipal and county police officers, such as LAPD, are state peace officers, under the authority of California Penal Code Section 830.1. LAWAPD officers are also sworn state peace officers, under the authority of 830.33 of the California Penal Code with special designation as airport police officers.[56]

County Regulation

The County of Los Angeles is required by state law to organize a formal mutual aid agreement between all police departments within its jurisdiction. This agreement is set forth in the Mutual Aid Operations Plan for

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56 City of Los Angeles, Los Angeles World Airports, "About LAWA Police Division," Available: http://www.lawa.org/AirportPolice/AboutUs.aspx?id=4617, accessed December 10, 2015.

Los Angeles County. The Mutual Aid Operations Plan is a reciprocal agreement between signatory agencies (in this case, the County of Los Angeles and City or other local police departments) to provide police personnel and resources to assist other member agencies during emergency and/or conditions of extreme peril. Any formal mutual aid requests by any police department within Los Angeles County are made with the LACSD. However, additional informal agreements may be made directly between the police agencies involved.

The Mutual Aid Operations Plan is a formal agreement signed by the Chief of Police of every police department within the County, including the Chief Officer for LAWAPD and Chief of LAPD. The Mutual Aid Operations Plan provides a structure of response should an emergency at LAX arise that requires immediate response by more law enforcement personnel than would be available to the LAPD and LAWAPD using all other available resources.

Local Regulations

Memorandum of Agreement

The responsibilities of the LAWAPD and LAPD are set forth in a Memorandum of Agreement (MOA) executed in 2006.[57] The MOA serves to ensure that, in the event of an emergency, a formal means of requesting and providing additional aid to any signatory agency is in place. This means that the LAWAPD can request and is entitled to receive aid from the LAPD if supplementary law enforcement personnel are needed to control an emergency situation; the LAPD has the same entitlements. The MOA, similar to one approved in 1988, adds requirements for the LAPD to notify the LAWAPD about its operations on airport property and sets employment and training standards for the LAWAPD. The agreement also calls for both agencies to go through joint training on certain airport issues.[58]

LAX Rules and Regulations

LAWA's *LAX Rules and Regulations* manual is published under authority contained in Sections 632(b) and 633(a) and (b) of the Los Angeles City Charter, which empowers LAWA to make rules and regulations governing the use and control of City airports, subject to the powers of the United States respecting commerce. The *LAX Rules and Regulations* manual complies with FAA 14 CFR Part 139 and the TSA TSR Parts 1540 and 1542, which require airport management to establish operational and safety procedures and institute certain security measures to meet FAA and TSA requirements for airport certification.[59]

The Airport Security Section, Section 7, of the *LAX Rules and Regulations* manual specifically applies to law enforcement at LAX. Regulatory provisions are set forth in the manual in accordance with resolutions adopted by the Board of Airport Commissioners, directives issued by the Airport Manager, and FARs and TSR

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57 City of Los Angeles, Los Angeles World Airports and Los Angeles Police Department, *Memorandum of Agreement*, June 2006.

58 McGreevy, Patrick, "LAPD and Airport Police Reach Accord," *Los Angeles Times*, June 28, 2006.

59 City of Los Angeles, Los Angeles World Airports, *LAX Rules and Regulations,* September 2010.

provisions. Law enforcement provisions are in accordance with the Uniform Penal Code, federal and state law enforcement service requirements, and all applicable laws, rules, and regulations assigned to LAX.

LAX Plan

The purpose of the LAX Plan[60] is to "promote an arrangement of airport uses that encourages and contributes to the modernization of the airport in an orderly and flexible manner within the context of the City and region." LAX Plan policies that are relevant to police protection services include the following:

- Consult with LAPD, LAWAPD, other law enforcement agencies, and security experts, as appropriate, during the facility planning, design, and review phases so that potential environmental contributors to criminal activity are reduced and to ensure the security of the airport, airline passengers, and the surrounding community; and
- Provide law enforcement and fire facilities to enhance emergency response times and facilitate coordination with other emergency response agencies.

LAX Airport Emergency Plan

In accordance with FAA guidance provided in Advisory Circular 150/5200-31C, the AEP addresses the essential emergency-related and deliberate actions that must be planned to ensure the safety of and emergency services for LAX and surrounding communities. The AEP details the roles and responsibilities that first responders, airport managers, commercial carriers, and airport tenants are to undertake in an emergency.[61]

City of Los Angeles General Plan Safety Element

The General Plan Safety Element, adopted on November 26, 1996, provides goals and policies pertaining to police protection services within the City of Los Angeles. Goal 9 of Chapter 9, Infrastructure and Public Services, requires every neighborhood to provide the necessary level of police services, facilities, equipment, and manpower needed to meet public safety needs. As such, adequate police services, facilities, equipment, and personnel are required to meet existing and future public needs. Additionally, police services are required to provide adequate public safety in emergencies by maintaining relationships with other local law enforcement agencies, state law enforcement agencies, and the U.S. National Guard.

Presently, the LAPD Computer Statistical Unit (COMPSTAT) implements the General Plan Framework goal of assembling statistical population and crime data to determine necessary crime prevention actions. COMPSTAT was created in 1994 and implements a multilayer approach to police protection services through statistical and geographical information system (GIS) analysis of growing trends in crime through its specialized crime control model.

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60 City of Los Angeles, Department of City Planning, *LAX Plan*, adopted December 14, 2004, last amended May 24, 2013, Available: http://planning.lacity.org/complan/specplan/pdf/LAXPLAN_AMENDED20130524_FINAL(SECURED).pdf.

61 City of Los Angeles, Mayor's Blue Ribbon Panel, *Report of the Mayor's Blue Ribbon Panel on Airport Security: A Report to Los Angeles Mayor Antonio R. Villaraigosa Concerning Public Safety at Los Angeles International Airport*, June 2011.

4.11.2.3.2 Existing Facilities

LAWAPD is supplemented by LAPD resources at LAX. As discussed earlier, an MOA between LAWA and the LAPD was signed in 2006. This agreement identifies the responsible operator of LAX as LAWA, under the FAA, and identifies the responsibilities and reporting procedures to support a coordinated effort between LAWAPD and LAPD staff at LAX airport facilities. As designated under the MOA, LAWAPD provides law enforcement services, preliminary crime investigations, aircraft safety and traffic enforcement, security services, and emergency response, while the LAPD retains primary duties of criminal investigation of penal provisions of city, state, and federal codes. All LAWAPD and LAPD officers, with the exception of LAWAPD security officers, are sworn peace officers and have the power to arrest. LAWAPD security officers do not have peace officer status, but they can make citizen's arrests.[62] The MOA ensures that, in an emergency, a formal means of requesting and providing additional aid to each signatory agency is in place. The staffing and facility space for police departments serving the Project site are shown in **Table 4.11.2-1.**

The Pacific Community Police Station, located at 12312 Culver Boulevard, serves the Los Angeles communities of Del Rey, Manchester Square, Mar Vista, Oakwood, Palms, Playa del Rey, Playa Vista, Venice, and Westchester. In 2011, the most recent year for which data is available, the Pacific Community Police Station served a population of 203,664.[63] The crime rate was 29.8 incidents per 1,000 persons (includes homicide, forcible rape, robbery, aggravated assault, burglary, larceny, and vehicle theft).[64] The LAX Substation, located at 802 World Way is a substation of the Pacific Community Police Station.

Table 4.11.2-1: LAPD and LAWAPD Staffing and Facility Space at LAX

DEPARTMENT	STAFF	FACILITY SPACE (SQUARE FEET)
LAWAPD	1,100 [1/]	47,840
LAPD	20	2,808
Total On-Airport	**1,120**	**50,648**

NOTE:

1/ Includes both sworn and civilian employees.

SOURCES: Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015; City of Los Angeles, Los Angeles World Airports, "About LAWA Police Division," Available: http://www.lawa.org/AirportPolice/AboutUs.aspx?id=4617, accessed December 10, 2015.

PREPARED BY: Ricondo & Associates, Inc., July 2015.

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62 City of Los Angeles, Los Angeles World Airports and Los Angeles Police Department, *Memorandum of Agreement*, June 2006.

63 Los Angeles Police Department, Application Development and Support Division Management Report Unit, *Statistical Digest,* 2011.

64 Los Angeles Police Department, Application Development and Support Division Management Report Unit, *Statistical Digest,* 2011.

Los Angeles World Airports Police Division

LAWAPD is responsible for a wide range of law enforcement duties at LAX. These duties include criminal enforcement, traffic control, ground transportation regulations and airfield safety enforcement, and specialized units that deal with cargo theft and emergency response. LAWAPD is also involved with intelligence and planning to mitigate the possibility of any major disruption, including terrorism, (natural or man-made) to airport operations and passenger safety.

LAWAPD's Chief of Police reports to the Deputy Executive Director for Homeland Security and Law Enforcement who reports directly to LAWA's Executive Director. LAWAPD's three bureaus include the Office of Support Services, Office of Operations, and Office of Homeland Security and Intelligence. LAWAPD contains five service sections: Police Patrol Services, Traffic and Security, Office of Support Services, Office of Homeland Security and Intelligence, and Security Credential Section.[65]

Crime investigation is carried out by the Crime Task Force, which is comprised of one team of supervisors and seven teams of detectives. The lone supervisor team consists of two supervisors and the seven teams of detectives consist of three detectives each, for a total of 21 detectives. The Crime Task Force includes as of 2015, LAWAPD had a staff of approximately 1,100 sworn police officers and civilian employees. LAWAPD staffing levels are shown in Table 4.11.2-1. The LAWAPD facility is 47,840 square feet, located at 6320 W. 96th Street. The location of the LAWAPD facility, as well as the location of the LAPD station at LAX discussed below, is shown on **Figure 4.11.2-1**. Separate from the LAX Landside Access Modernization Program, the LAWAPD station is proposed for relocation to a site on Westchester Parkway, adjacent to Fire Station No. 5.

LAWAPD foot/bicycle officers and patrol cars are continually present within the CTA. Patrol vehicles currently access the CTA from the existing station located at W. 96th Street along the Sky Way Bridge, which is the quickest route.

LAWAPD is currently mandated by the TSA to respond to all secured and screening areas within a maximum time of 5 minutes.[66] In addition to the roaming foot/bicycle officers, LAWAPD utilizes multiple response vehicles, such as motorcycles, cars, and sport utility vehicles. Similar to those constraints posed on LAFD response times, LAWAPD's response is currently constrained by traffic congestion and construction delays within the CTA.[67] There are no set emergency access routes identified by LAWAPD within the CTA. However, because of the existing congestion and delays, LAWAPD employs the strategy to take the quickest route possible at the time a response is needed.[68] LAWAPD would still be required to meet this 5-minute maximum response time upon relocation to the proposed facility on Westchester Parkway.

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[65] City of Los Angeles, Los Angeles World Airports, "About LAWA Police Division," Available: http://www.lawa.org/AirportPolice/AboutUs.aspx?id=4617, accessed December 10, 2015.

[66] Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015.

[67] Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015.

[68] Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015.

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets, Land Uses); Los Angeles County, L.A. County GIS Data Portal, County Data, Accessed Online, August 2014; LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.11.2-1

Public Services
Police Department Locations

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Los Angeles Police Department

The LAPD is required by City mandate to provide law enforcement within the boundaries of the City of Los Angeles, which includes LAX. The LAPD retains its primary duty to enforce the penal provisions of the city, state, and federal governments. As such, the LAPD is charged, in accordance with the MOA, with primary responsibility for the investigation of certain categories of crimes at LAX, and has primary local law enforcement responsibility for investigating and addressing terrorist threats. The LAPD supplements LAWAPD's daily operational capabilities by providing bomb squad and special weapons and tactics (SWAT) resources to respond to emergencies at the Airport. The LAPD also assists DEA staff, by providing K-9 officer services through canine patrols and criminal investigation and has a specialized SWAT unit and bomb squad to respond to emergencies at the Airport. In addition to crime investigation, the LAPD can be called upon to provide additional officers to secure an area and provide crowd and traffic control if LAWAPD does not have sufficient personnel. When required during emergencies, the LAPD can request support from the Pacific, Southwest, and 77th Divisions of the LAPD.

The LAPD occupies one triple-wide trailer (2,268 square feet) that provides administrative space and one single-wide trailer (540 square feet) at 802 World Way. As shown in Table 4.11.2-1, up to approximately 20 LAPD employees are stationed at the LAX station at a given time.[69]

4.11.2.4 Thresholds of Significance

A significant impact on law enforcement services would occur if the proposed Project would result in one or more of the following conditions:

- An increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or would require new or expanded facilities without providing adequate mechanisms for addressing these additional needs.
- An increase in emergency response times beyond the limits required by applicable jurisdictions within the study area, caused by increased traffic congestion, changes in circulation, expansion of airport property, or the location of new land uses.

These thresholds are derived from the *L.A. CEQA Thresholds Guide*.[70]

4.11.2.5 Impact Analysis

4.11.2.5.1 LAX Landside Access Modernization Program Project

The following analysis pertains to both Phase 1 and Phase 2 of the proposed Project. The Phase 2 program features (potential future related development) are discussed separately.

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69 Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015.

70 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Construction

Construction of the proposed Project would alter ground access within the Project site. Traffic congestion associated with construction of the proposed Project could delay the ability for LAWAPD to provide adequate emergency response. Construction activities would include temporary and intermittent local roadway and/or lane closures along W. Century Boulevard, S. Sepulveda Boulevard, Westchester Parkway/W. Arbor Vitae Street, Airport Boulevard, Aviation Boulevard, W. 96th Street, W. 98th Street, and S. La Cienega Boulevard. Construction of the proposed roadway improvements would contribute to increases in traffic congestion within the Project site until year 2024, when the majority of the roadway improvements would be completed. Traffic congestion would improve after 2024; however, the remaining roadway improvements would not be completed until 2035.

LAWAPD's average response times in and around the Project site may increase as a result of the response distance and traffic conditions. Moreover, removal of the W. 96th Street/Sky Way Bridge may also impact the ability for LAWAPD to adequately respond to incidents within the CTA. Roadway closures would have the potential to result in increased response times for law enforcement. LAWA would coordinate with LAWAPD regarding emergency access and other design needs to ensure that there is adequate emergency access throughout the Project site during construction. In the event construction activities would result in deterioration of traffic conditions, LAWAPD would continue to implement use of emergency sirens and alternate response routes to help facilitate emergency access and response. Therefore, the phased implementation of these roadway improvements by 2024 and 2035 would have the potential to increase emergency response times throughout the Project site and therefore result in a significant impact. Impacts would vary throughout the location and timing of construction activities of the proposed Project.

Construction of the proposed Project could result in accidents at staging areas (see Figure 2-50) and a temporary increase in risk to vehicles, bicycles, and pedestrians. In addition, the construction staging areas would need to be secured to prevent theft of equipment and materials, or vandalism after work hours. This increased area needing LAWAPD surveillance could result in an additional burden on LAWAPD response. Construction activities would comply with all regulatory requirements pertinent to maintaining safety and security within staging areas. LAWA would also implement, as necessary, security fencing, surveillance cameras, security personnel, and the locking and securing of equipment to reduce demand on LAWAPD. Impacts to law enforcement services surveillance/patrolling resulting from construction staging areas would therefore be less than significant.

Construction of the proposed Project would temporarily increase the number of construction workers on-site during construction, as discussed in Section 4.10, *Population and Housing*. However, construction would occur in secure areas and would be monitored by the construction contractors. Thus, construction of the proposed Project would not require a substantial increase in law enforcement services.

As described above, traffic congestion associated with construction of the proposed Project could hamper LAWAPD's or LAPD's emergency response activities. Therefore, construction of the proposed Project could result in an increase in emergency response times beyond the limits required by applicable jurisdictions within the study area due to increased traffic congestion, changes in circulation, or the location of new land uses. Impacts would be significant.

Operations

The proposed Project would introduce new uses to the site, including an APM, ITFs, and a CONRAC, which would substantially increase the amount of occupied area on the Project site. Operation of the proposed Project would result in a dispersion of Airport passengers, visitors, and other persons utilizing LAWA facilities across a larger area, which may contribute additional demand for law enforcement services. As discussed in Section 4.10, *Population and Housing*, operation of the proposed Project would include a net increase of approximately 100 employees, which would not constitute a substantial increase in on-Airport employment compared to the existing 33,200 employees currently located on the LAX Footprint.[71] Nonetheless, this increase in employees in combination with other Airport passengers, visitors, and other person utilizing LAWA facilities could result in a minor increase in the of number of calls for police protection services within the Project site.

As a result of the increase of occupied area, the proposed Project could demand an increase in policing activities and vehicle-related incidents (e.g., auto thefts and auto break-ins). Additional law enforcement personnel may be required to patrol the areas particularly outside of the CTA, such as the West and East ITFs and CONRAC. The proposed Project would incorporate various planned security features, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes, to reduce demand on LAWAPD and need for law enforcement response. In addition, LAWAPD has suggested the placement of a satellite office within proximity to the CONRAC and ITF East (east of Aviation Boulevard).[72] Providing a location in addition to the existing LAWAPD facility, as well as the proposed relocated site on Westchester Parkway, would allow LAWAPD to have an additional staging and deployment point east of S. Sepulveda Boulevard, a major roadway and thereby providing quicker response to areas to the east. A satellite office in this area would provide LAWAPD with the capacity to serve a larger area of Airport uses and maintain its mandated response times described in Section 4.11.2.3. At this time, LAWA has not included a satellite office in the proposed Project description; however, there is sufficient room in either the CONRAC or ITF East for a satellite office, if it is determined in the future that a satellite office should be provided in this area.

As discussed in Section 4.11.1.5.1, emergency access throughout the Project site would be provided by the existing and proposed street network. These proposed improvements would involve new roadway segments, additional lanes, realignment of segments of some existing roads, restriping, modified freeway ramps, new or realigned driveways, roadway closures, and intersection improvements. The proposed Project would also implement pedestrian walkways to direct pedestrian movement off the roadways. As discussed in Section 4.12.1, *On-Airport Transportation*, operation of the APM system, ITFs, CONRAC, roadway improvements, and other ground access improvements would reduce traffic congestion and the demand for curb-fronts, which would reduce the potential for automobile collisions, automobile/pedestrian conflicts, and automobile-related emergency response incidents, and improve the overall safety and security characteristics of the Airport.

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71 The LAX Footprint encompasses all properties owned by LAWA within and outside the CTA.

72 Sergeant Keith Arnold, Airport Police, Los Angeles World Airports, Personal Communication, December 1, 2015.

Improved traffic flow associated with the proposed Project would improve response times for law enforcement over time.

The demolition of the W. 96th Street/Sky Way Bridge, which is currently LAWAPD's quickest route into the CTA, could affect the ability for LAWAPD to respond to incidents within the CTA within the desired response time, especially after the relocation of the existing LAWAPD station to a site on Westchester Parkway, which would increase response times. As such, LAWAPD may be required to modify its deployment of foot/bicycle officers patrolling the CTA in order to maintain its 5-minute maximum response time to all secured and screening areas, as mandated by TSA. The need for additional foot/bicycle officers around the CTA may result in the need for some LAWAPD staff, but this would not represent a substantial increase in law enforcement services.

The proposed Project would reduce traffic congestion, but also result in changes in circulation, expansion of airport property, and new land uses. Operation of the proposed Project would not result in a substantial increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs.

While the proposed Project would contribute additional demand for law enforcement personnel, LAWA would continue its existing practice of working with LAWAPD and LAPD to routinely evaluate and provide additional officers, supporting administrative staff, and equipment, to keep pace with increases in activity associated with the proposed Project in order to maintain a high level of law enforcement services. This would be achieved through LAWA notification to LAWAPD and LAPD regarding pending development and construction and through LAWA review of status reports on law enforcement services at LAX. Therefore, impacts on law enforcement services during operation of the proposed Project would be less than significant.

4.11.2.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The proposed Project would require changes to the configuration of existing parcels owned by LAWA that would create new parcels, which would be used for construction laydown and staging areas (see Figure 2-51). After construction, there is the potential for future development of these new parcels for up to 900,000 sq. ft. of commercial uses. The new uses resulting from the development of these parcels would increase the number of incidents requiring law enforcement services. Over time, this could result in a need for additional staffing, equipment, or the expansion, consolidation, or relocation of an existing facility to maintain law enforcement services.

Developers of all potential future related development would be required to coordinate with LAWAPD and incorporate planned security features to reduce increased demand on local law enforcement. Development of individual future related projects may require temporary and/or partial street closures due to construction activities. Such closures would have the potential to increase demand on local law enforcement services, or impair emergency access throughout the future project site. However, any such closures would be temporary in nature. Additionally, prior to the issuance of any building permits, consultation with the LAWAPD regarding any potential road closures would be required to minimize law enforcement impacts. As such, impacts to emergency response times related to construction and operation of potential future related development would be less than significant.

At this time, there are no specific plans for development of the proposed newly created parcels. As individual development projects are proposed for these parcels, additional CEQA project-level environmental review would be conducted, as necessary. Developers of all potential future related development would be required to coordinate with LAWAPD and incorporate planned security features to reduce demands on local law enforcement. Through incorporation of security features and coordination with LAWAPD, operational law enforcement impacts are considered less than significant because potential future related development would not require a substantial increase in law enforcement services to maintain adequate services, would not require new or expanded facilities without providing adequate mechanisms for addressing these additional, and would not increase emergency response times beyond the limits required by applicable jurisdictions.

4.11.2.6 Cumulative Impacts

As discussed in Section 4.11.2.5, the proposed Project would alter ground access to, from, and around LAX, which has the potential to impair the movement of emergency vehicles. While local roadway and/or lane closures would occur for varying periods during construction, roadway access would be maintained by the use of detours and traffic lane reconfigurations. These closures would have the potential to result in an increase in response times for law enforcement personnel, which could result in a significant impact with regards to response times for law enforcement services.

Cumulative projects at and adjacent to LAX forecasted to be constructed concurrent with implementation of the proposed Project facilities are identified in Table 3-1 and probable future projects identified in Table 3-2. As with the proposed Project, developers of other development projects at/adjacent to the proposed Project site, including the AMC 96th Street Transit Station, would be required to coordinate temporary and/or partial street closures with the LAWAPD and LAPD prior to issuance of building permits. Impacts to emergency access routes and response times could still occur from construction of cumulative projects if emergency access routes and local road closures are not closely coordinated. As a result, construction of the proposed Project in combination with cumulative projects could exacerbate construction related traffic delays and impair emergency access and increase response times, which would be a significant cumulative impact. Although LAWA would coordinate with LAWAPD and LAPD to minimize the impact of the proposed Project on emergency response during construction, the proposed Project’s contribution to significant cumulative impacts on law enforcement services during construction would be cumulatively considerable.

As discussed in Section 4.11.2.5, operation of the proposed Project would have a less than significant impact on law enforcement services. On-airport cumulative projects listed in Table 3-1, including terminal improvement projects and the LAX Northside Development, in combination with the proposed Project, could increase demand for law enforcement services.

Regarding cumulative off-Airport projects, the development of the Metro Crenshaw/LAX Transit Corridor and Stations, including the proposed AMC 96th Street Transit Station would introduce new rail facilities in the Airport vicinity, with a corresponding increase in demand for law enforcement services. However, Metro would implement system safety program plans and system security plans, which would address the safety and security of transit commuter operations, mitigate accidents, and support compliance with state regulations. [73] These safety measures have been established to provide employee and passenger safety, crime prevention, adequate emergency response, and emergency procedures. In addition, the proposed stations would be designed to avoid obstructions to visibility or observation and would be adequately lit and monitored by security personnel.

As discussed in Section 4.12.1 and 4.12.2 of *Transportation/Traffic,* implementation of the proposed Project roadway improvements would reduce traffic congestion in and around the area which would reduce potential for automobile accidents and automobile/pedestrian conflicts, and other automobile-related emergency response incidents at the Airport. Improved traffic flow associated with the proposed Project would improve response times for law enforcement over time. The Metro Crenshaw/LAX Transit line would similarly have the potential to reduce traffic congestion in and around the Airport which would be a beneficial cumulative impact.

Based on the above, operation of the proposed Project, in combination with other development projects at/adjacent to LAX would not require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. Moreover, cumulative development would not increase emergency response times beyond the limits required by applicable jurisdictions. Therefore, cumulative impacts on law enforcement services would be less than significant.

4.11.2.7 Mitigation Measures

As indicated in Section 4.11.2.5, impacts related to law enforcement services during construction would be significant. The mitigation measures identified in Section 4.11.1.7 would be implemented to reduce significant impacts on law enforcement services.

4.11.2.8 Level of Significance after Mitigation

With implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5, the proposed Project's significant impacts on law enforcement services would be reduced to a level that is less than significant, and less than cumulatively considerable, because these measures would facilitate effective coordination with LAWAPD and LAPD to meet their standards and requirements, and through Project Task Force implementation would ensure the availability emergency access and adequate response times during all construction phases.

4.11.3 SCHOOLS

4.11.3.1 Introduction

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[73] Los Angeles County Metropolitan Transportation Authority (Metro), *Crenshaw/LAX Transit Corridor Project Final Environmental Impact Statement/Final Environmental Impact Report*, August 2011, p. 4-267 and p. F-65.

This section addresses the impacts of the proposed Project on public schools within the LAUSD. As identified in Chapter 2, *Description of the Proposed Project*, implementation of the proposed Project would require the acquisition of the Stella Middle Charter Academy and Bright Star Secondary Charter Academy, which are both located in the Manchester Square area. LAWA has an existing relocation program underway to mitigate aircraft noise impacts on the Manchester Square area, as part of *Los Angeles World Airports Relocation Plan: Manchester Square and the Belford Area*[74]—also known as the existing Aircraft Noise Mitigation Program (ANMP) Relocation Plan for the Belford and Manchester Square areas. This section evaluates the effects of acquiring these schools as a part of the proposed Project.

4.11.3.2 Methodology

The existing conditions of the public schools serving the proposed Project site were determined by utilizing information supplied by the LAUSD and the California Department of Education (CDE). Private and higher education institutions were not evaluated because they are privately funded and not mandated to provide public services. Therefore, these institutions are not discussed herein.

As discussed in Section 4.10, *Population and Housing*, the proposed Project does not include residential development and would not have a direct impact on population growth and associated increases in the number of students into the LAUSD. Any employment generated by the proposed Project would not create a substantial increase in students within the area as employees would likely not require relocation of their existing places of residence.

4.11.3.3 Existing Conditions

4.11.3.3.1 Regulatory Setting

Federal Regulations

Education in the State of California is primarily regulated at the state and local level; however, the federal government does provide funding for specialized programs. In fiscal year 2013–2014, federal funding accounted for $557.3 million, approximately 9 percent of the LAUSD's total revenue.[75] These funds are mandated for specific programs (i.e., school lunches/breakfasts, Title 1, special education, school to work, child development, and adult education), and are not used for general educational purposes.

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[74] City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports Relocation Plan, Voluntary Residential Acquisition/Relocation Program for the Areas Manchester Square and Airport/Belford*, adopted by the Board of Airport Commissioners, June 2000.

[75] Los Angeles Unified School District, Budget Services and Financial Planning Division, *Superintendent's Final Budget 2015–2016*, June 23, 2015.

State Regulations

Leroy F. Greene School Facilities Act of 1998

The current statutory approach to school facilities financing and fees was established by SB 50, also known as the Leroy F. Greene School Facilities Act of 1998. Under SB 50, the state, except where hardship assistance is provided, will fund 50 percent of the cost of future school facilities, assuming that local bonds will be approved, and that school fees will provide the remaining 50 percent. SB 50 states that local agencies are restricted, with few exceptions, from exacting fees or imposing other requirements to mitigate the effects of new land development on school facilities beyond the fee amounts authorized by SB 50. Relevant to evaluation of development projects under CEQA, SB 50 establishes two fee options to mitigate significant impacts of new development on schools.

- A school district can adopt the maximum school fee amounts pursuant to the 1986 School Facilities Act (Education Code Section 17620).
- Interim school fees can be adopted by a city and school district pursuant to Government Code Section 65970.

SB 50 allows maximum fee amounts that are "deemed to provide full and complete school facilities mitigation" for purposes of CEQA.[76] Pursuant to SB 50, the initial, or Level 1 fee that can currently be charged by a school district is $0.33 per square foot for commercial construction. Beginning in 2000, the amounts for commercial construction have been adjusted for inflation every 2 years. A school district can qualify for higher, Level 2 fees if the State Allocation Board determines the school district is eligible for new construction funding. Eligibility is only granted after a district conducts a school facilities needs analysis, satisfies other requirements relating to utilization of other school sites, and attempts to secure voter approval for local bond measures. SB 50 also includes important provisions relating to types of development subject to statutory fees. These provisions, as set forth in Government Code Section 65995(d), indicate that commercial and industrial developments occupied by local, state, and federal government agencies are not subject to school fees. The payment of a fee pursuant to Section 65995 is deemed to be full and complete mitigation of the impacts of development.

California Department of Education

California Education Code Section 17251 and the California Code of Regulations (CCRs), Title 5, Section 14001 through 14012, outline the power and duties of the CDE regarding school sites and the construction of school buildings. Districts seeking state funding must comply with these identified California Education Code and CCRs sections for approval of new or additions to school sites. The CDE has developed the School Site Selection and Approval Guide to help school districts (1) select school sites that provide both a safe and supportive environment for the instructional program and the learning process; and (2) gain state approval for

[76] California Government Code, Section 65996(b).

the selected sites.[77] As school site selection is affected by many factors, such as health and safety, location, size, and cost, the CDE has developed screening and ranking criteria to prioritize the site selection process. These screening and ranking criteria include but are not limited to safety, location, environment, soils, and topography.

Local Regulations

Los Angeles Unified School District

State law permits school districts to charge development fees to fund capital acquisition and improvements to school facilities, based on documented justification that residential and nonresidential development projects generate students. LAUSD collects the maximum new school construction facility fee at a rate of $0.54 per square foot of commercial/industrial construction, $0.28 per square foot of self-storage structure, and $0.07 per square foot of parking structure.[78] Payment of fees is required prior to the issuance of certificates of occupancy.

Los Angeles Municipal Code

The LAMC requires decision makers to adopt findings and/or establish conditions to ensure compatibility with the surrounding neighborhood and to minimize possible adverse environmental impacts ranging from noise, extended hours of after school activities, inadequate parking, increase of traffic, pick-up and drop-off of students, lighting, special event activities, trash disposal, site maintenance, and other impacts from the operation of the schools.

4.11.3.3.2 Existing Facilities

LAUSD provides public K–12 education for the City of Los Angeles and 31 other cities, and for several County of Los Angeles unincorporated communities. Currently, LAUSD enrolls more than 640,000 students in kindergarten through 12th grade, at more than 900 schools, and 187 public charter schools. LAUSD's 720-square-mile area is divided into six local districts that manage schools within their boundaries.[79] These local districts are divided geographically and identified as northeast, northwest, east, west, central, and south.

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[77] California Department of Education, "School Site Selection and Approval Guide," Available: http://www.cde.ca.gov/ls/fa/sf/schoolsiteguide.asp#role, accessed August 2016.

[78] Representative from the LAUSD Developer Fee Program Office (DFPO), Personal Communication, August 26, 2016.

[79] Los Angeles Unified School District, "District Information," Available: http://achieve.lausd.net/about, accessed August 2016.

The Project site is located within the boundaries of LAUSD Local District West. The only public schools located within the Project site are the Stella Middle Charter Academy (grades 7-8) and the Bright Star Secondary Charter Academy, both located at 5431 W. 98th Street. As shown in **Figure 4.11.3-1**, these schools are located within the Manchester Square area of the Project site. These schools gained their first charter from LAUSD in 2003; Stella Middle Charter Academy opened its doors in August of that year and Bright Star Secondary Charter Academy began operation with its first freshman class in 2006.[80] The existing facility that these schools occupy was previously occupied by LAUSD, who to date still holds ownership of the facility. As part of the existing ANMP, LAWA plans to purchase the facility currently occupied by the Stella Middle and Bright Star Secondary Charter Academies from LAUSD.

The 2014–2015 enrollments of Stella Middle Charter Academy and the Bright Star Secondary Charter Academy were 558 students and 559 students, respectively.[81]

4.11.3.4 Thresholds of Significance

A significant impact on schools would occur if the proposed Project would result in the following condition:

- Substantial adverse physical impacts associated with the provision of new or physically altered school facilities, need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools.

The above threshold is derived from the *L.A. CEQA Thresholds Guide.*[82]

4.11.3.5 Impact Analysis

4.11.3.5.1 LAX Landside Access Modernization Program Project

Construction

Implementation of the proposed Project would involve development on the 135-acre site currently known as Manchester Square. This portion of the Project site would accommodate the ITF East and CONRAC, which would connect to the CTA via the APM. Development within Manchester Square would also include construction of new roadways to provide access to the ITF East and CONRAC facilities.

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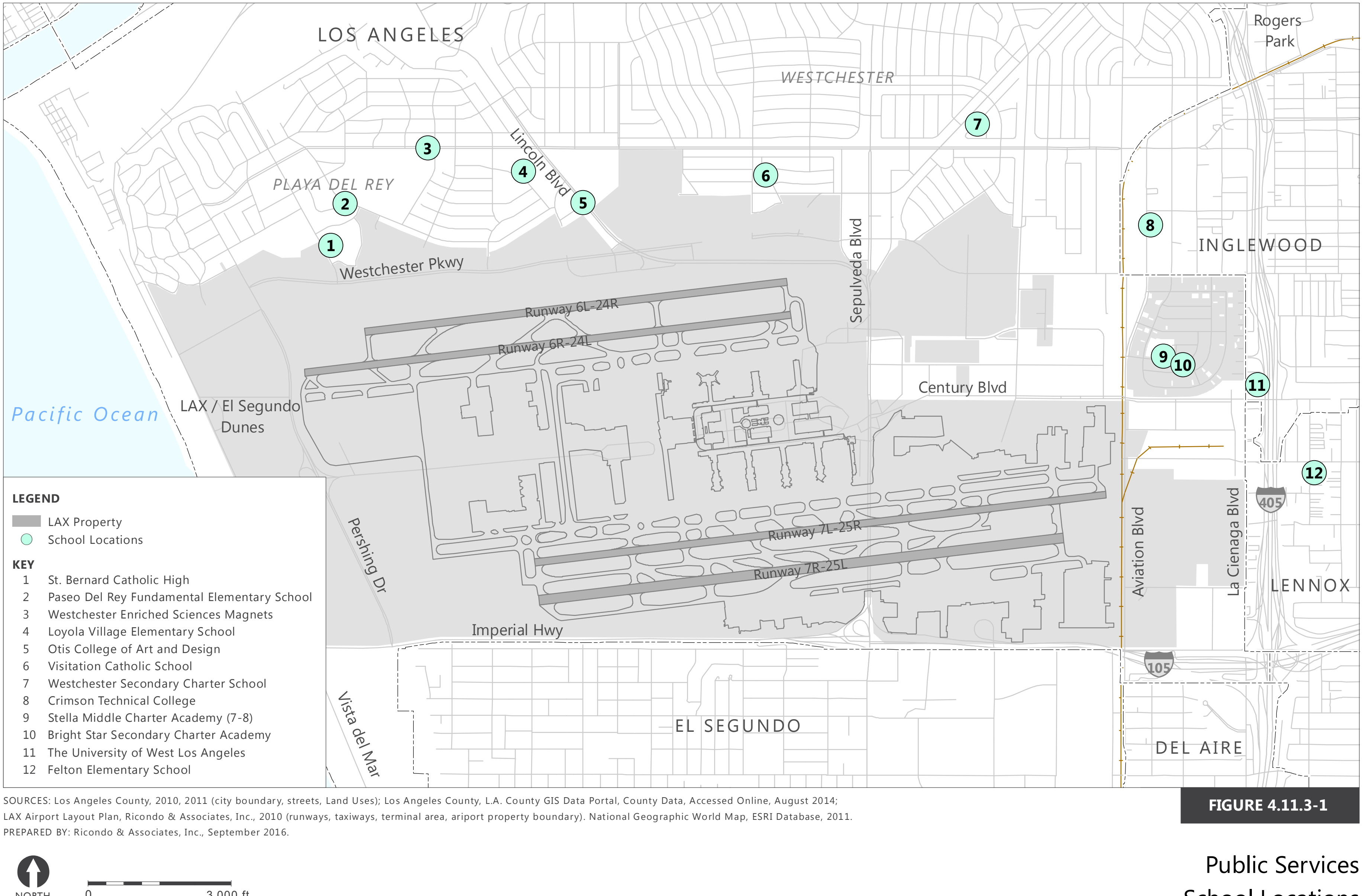
80 Bright Star Schools, “Our Story,” Available: http://www.brightstarschools.org/District/1119-Untitled.html, accessed December 10, 2015.

81 California Department of Education, Educational Demographics Unit, "Data Quest," Available: http://dq.cde.ca.gov/dataquest/dataquest.asp, accessed October 2015.

82 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets, Land Uses); Los Angeles County, L.A. County GIS Data Portal, County Data, Accessed Online, August 2014; LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary). National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.11.3-1

Public Services
School Locations

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Implementation of the proposed Project would include the acquisition of the site that currently contains the existing Stella Middle Charter and Bright Star Secondary Charter Academies, both located at 5431 W. 98th Street within Manchester Square. The relocation of these schools has been identified as part of LAWA's ongoing ANMP. LAWA has been coordinating closely with Bright Star to identify suitable relocation sites for the schools. Currently Bright Star is in negotiations for a property to house the Bright Star Secondary Charter Academy, and is considering a relocation for the middle school students in a neighboring school district. Because new facilities for these schools may not be available prior to construction of the proposed Project, LAWA may temporarily relocate the schools to Airport property located in the LAX Northside area, as discussed in Section 2.5.

Construction to accommodate the proposed Project where the existing Stella Middle Charter and Bright Star Secondary Charter Academies are currently housed would result in the demolition of the existing buildings that house the schools; however, most construction would not commence until the relocation of the schools has been completed. Construction of the columns for the APM guideway may occur prior to relocation of the schools, if they have not relocated prior to when that needs to occur, The closest APM column to the schools would be approximately 300 feet north of the property and would not impact school operation, if they are still open at that location.

Because the Stella Middle Charter and Bright Star Secondary Charter Academies are charter schools, they would not require state funding to cover the cost of securing a new facility. As such, the relocation of these two charter schools would not be subject to the same level of CDE siting requirements described in Section 4.11.3.3, as would apply for regular public schools seeking state funding. It should be noted that LAWA is not responsible for the identification of a new site for the relocation of the charter school but LAWA would provide monetary assistance to relocate the Stella Middle Charter and Bright Star Secondary Charter Academies as part of any relocation effort.

At the time of Draft EIR preparation, Bright Star was working actively to find new school facilities for Bright Star Secondary Charter Academy and Stella Middle Charter Academy in closer proximity to other existing affiliated schools and the majority of students' residential neighborhoods to reduce or avoid long busing operations. In the event that permanent facilities are not available at the time the properties are needed for construction, temporary facilities would be constructed on the LAX Northside area. Modular facilities may be constructed or rented to allow for temporary operations of the schools for a period of up to three years, or until the new school facilities are secured and available for use.

No other public school facilities are located on parcels that would be impacted by construction of the proposed Project. However, as implementation of the proposed Project would cause the relocation of the Stella Middle Charter and Bright Star Secondary Charter Academies as noted above, construction and operation of these schools at new sites could cause significant impacts. While the relocation of these school facilities would be evaluated in any required LAUSD CEQA documents, this would be an indirect impact caused by the proposed Project. As such, construction of the proposed Project could result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, or need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools. Impacts to public schools would be significant.

Operations

The operation of the proposed LAX Landside Access Modernization Program would not have any effect on existing public school facilities. The Project would not induce significant shifts in population or change the school age population in the area. In 2010 there were as many as 400 people under the age of 18 residing within Manchester Square.[83,84] As discussed in Section 4.10, *Population and Housing,* the estimated population within Manchester Square has decreased since 2010 as a result of the existing ANMP Relocation Plan. As such, the number of people under the age of 18 residing within Manchester Square is likely to have also decreased since 2010. This existing school age population is likely located within the local school system and would thereby continue to remain in the local school system upon relocation from Manchester Square. Therefore, operation of the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities, the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools. Impacts to public schools would be less than significant.

4.11.3.5.2 LAX Landside Access Modernization Program Potential Future Related Development

The proposed Project would require changes to the configuration of existing parcels owned by LAWA that would create new parcels, which would be used for construction laydown and staging areas (see Figure 2-51). After construction, there is the potential for future development of these new parcels for up to 900,000 sq. ft. of commercial uses. At such time as individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary. While residential uses are not proposed, the potential future related development would result in a generation of approximately 1,900 employees (see Section 4.10, *Population and Housing)*, thus increasing the number of employees within the Project area. Most of the new employees would likely be drawn from the Los Angeles regional area and would not require relocation of residency or development of new school facilities.

All individual development projects would be required, as necessary, to pay mandatory developer fees pursuant to California Education Code, Section 17620 or Government Code Section 65970 to offset any increased demands on local schools. As such, potential impacts on existing school facilities resulting from potential future related development would be less than significant.

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83 U.S. Department of Commerce, U.S. Census Bureau, "2010 Census Interactive Population Search," Available: http://www.census.gov/2010census/popmap/, accessed June 2016.

84 As discussed in Section 4.9, *Population and Housing, of this Draft EIR,* Manchester Square is identified by Census Tract 277400, which as of 2010 had a population of 1,533 people.

4.11.3.6 Cumulative Impacts

As discussed in Section 4.11.3.5, the proposed Project would result in a significant impact on public schools. As identified in Table 3-1, there are a number of ongoing and future projects planned within the immediate area of the proposed Project, including the AMC 96th Street Transit Station. The majority of these cumulative projects would occur on LAX property and would have no physical impacts on existing schools. All individual projects would be required, as necessary, to pay mandatory developer fees pursuant to California Education Code, Section 17620 or Government Code Section 65970 to offset increased demands on local schools. Although the proposed Project would result in a significant direct impact to two specific schools, cumulative impacts related to schools would be less than significant.

4.11.3.7 Mitigation Measures

As indicated in Section 4.11.3.5, indirect impacts to school facilities would be significant. The following mitigation measure is proposed to reduce significant impacts to school facilities.

- **LAX-PS (LAMP)-1 –School Relocation Impacts:** , As required by CEQA, LAUSD, as lead agency, will evaluate the environmental impacts of the specific relocation proposal(s), and will adopt mitigation measures to avoid or substantially lessen any significant impacts determined in that evaluation.

4.11.3.8 Level of Significance after Mitigation

With implementation of Mitigation Measure LAX-PS (LAMP)-1, the proposed Project’s significant impacts to school facilities would be reduced to a level that is less than significant, because this measure describes LAUSD’s required CEQA review prior to relocation of the schools to other sites, including mitigation obligations. However, because implementation of Mitigation Measure LAX-PS (LAMP)-1 is within the responsibility and jurisdiction of a public agency other than LAWA (i.e., LAUSD), LAWA cannot require it to be implemented. Significant impacts associated with school relocations may not be reduced to less than significant if LAUSD does not adopt effective mitigation measures or if mitigation is infeasible. In that case, the proposed Project’s indirect impacts on school facilities would remain significant and unavoidable.

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4.12 Transportation/Traffic

4.12.1 ON-AIRPORT TRANSPORTATION

This section addresses the on-Airport surface transportation system within the Central Terminal Area (CTA) relative to traffic-related impacts associated with the operation of the proposed Project. Impacts to the on-Airport surface transportation system during construction of the proposed Project improvements are addressed in Section 4.12.3, *Construction Surface Transportation*.

4.12.1.1 Introduction

The LAX Landside Access Modernization Program is an integrated set of transportation infrastructure improvement projects designed to improve the interface between passenger terminals at LAX and the regional ground transportation system, including the off-Airport roadway network and regional transit system. The proposed Project encompasses the ground transportation and related infrastructure from within the CTA east to Manchester Square/Interstate 405 (I-405), and from Century Boulevard north to Westchester Parkway/W. Arbor Vitae Street.

The analysis addresses how the physical improvements resulting from the proposed Project would affect existing and future (2024 and 2035) traffic conditions within the CTA. The analysis includes a description of reasonably foreseeable physical conditions of the on-Airport transportation system in 2024 without construction of proposed Project components. Assumptions incorporated into that future condition include: (1) the Existing (2014) physical conditions and configuration of the CTA plus reasonably foreseeable on-Airport ground access system improvements by 2024 as well as 2035, independent of, and separate from, the proposed Project; and (2) reasonably foreseeable regional (non-Airport) programmed improvements and ambient growth in off-Airport traffic, as they may affect on-Airport traffic.

The on-Airport traffic analysis includes a description of existing (2014) traffic conditions, and compares With Project traffic to this existing conditions baseline. The baseline year of 2014 was utilized because LAWA conducted extensive traffic counts in the CTA during August 2014, which was used to develop and calibrate the on-Airport traffic model. Because the Notice of Preparation for the proposed Project was released in February 2015, and traffic peaks at the Airport during July and August, data from August 2014 was the most appropriate to use as the baseline for this analysis. The analysis also includes two future conditions. The future (2024) and future (2035) Without Project conditions include the ground access improvements as described in Section 4.12.1.6, and also include an increase in on-Airport traffic from increased passenger activity levels forecasted to occur at LAX by 2024 and 2035, forecasted to occur with or without the proposed Project. The future (2024) and future (2035) With Project conditions consists of: (1) reconfiguration of the CTA roadways as a result of the proposed Project; (2) the existing (2014) physical conditions and configuration for the remainder of the CTA plus reasonably foreseeable on-Airport ground access system improvements by 2024 and 2035; (3) the 2024 and 2035 passenger levels and daily flight schedules; and (4) reasonably foreseeable regional (non-Airport) programmed improvements and ambient growth in off-Airport traffic.

4.12.1.2 Methodology

This analysis addresses the Project-related impacts to the signalized CTA intersections and roadway links resulting from variations in traffic accompanying the changes in passenger demand and peaking characteristics.

The traffic demand estimates prepared for this study were developed using a trip generation and trip distribution model that provides traffic volume estimates for all roadway links and curbside links within the CTA roadway system during multiple peak hour conditions for both the existing (2014) conditions and the future (2024) and (2035) Without Project and With Project conditions.

4.12.1.2.1 CTA Intersection Analysis

Signalized CTA intersections were analyzed to assess the effects of changes in vehicle activity and physical facilities throughout the CTA. It is critical to analyze vehicular intersections because these facilities meter traffic throughout the CTA roadway system and because they are key factors for vehicle throughput on the on-Airport roadways. Signalized intersections with two or more directions of vehicular travel were evaluated. For the purpose of this discussion, intersection movements are defined as through, left-turn, or right-turn movements.

4.12.1.2.2 CTA Roadway Analysis

Key CTA roadway links were also analyzed to assess potential implications on overall CTA throughput. The evaluation of the roadways throughput performance accounted for any loss of vehicle throughput as a result of the curbside operations. Roadway throughput performance, expressed in terms of vehicles per hour, is a measure of the number of vehicles that can pass a given roadway section in an hour. For this analysis, vehicle congestion created by stopped vehicles at the adjacent curbside is accounted for when evaluating the impacts on the roadway's throughput capacity. The curbside congestion reduces the roadway throughput. Key roadway links were analyzed to assess potential congestion along both the upper level and lower levels of the CTA roadway system.

4.12.1.2.3 Description of Existing (2014) Traffic Conditions

The description of existing (2014) on-Airport traffic conditions was based on CTA traffic volumes, Automated Vehicle Identification (AVI) counts, in-pavement loop detectors, and intersection turning movement counts collected in August 2014. Using August, which represents the peak month for roadway traffic accessing the CTA, the following methodology and data were used to determine the existing (2014) arrivals and departures Airport peak hours.

Passenger early arrival and late departure profiles were determined based on data obtained from the Los Angeles International Airport (LAX) 2011 Passenger Survey[1] and were applied to the Airport's domestic and international airline passenger schedules for August 2014 to predict when passengers arrive on the curbside. This data was reviewed to determine the Airport peak departure and arrival hours based on air passenger activity. The peak CTA vehicle traffic hours were assumed to coincide with the peak air passenger activity hours. The LAX 2011 Passenger Survey was used to develop initial assumptions; it was supplemented and verified with information from the LAX 2015 Passenger Survey.[2]

On-Airport Traffic Data Collected in 2014

Information from the Airport's in-pavement vehicle loop detectors and the AVI systems was used to obtain roadway traffic count data within the CTA. The counts representing existing (2014) conditions were collected on Friday, August 8, 2014. Friday was selected as the design day as it is typically the busiest overall day of the week for the Airport roadway system. The intersection turning movement counts were collected during a.m., mid-day, and p.m. commuter peak hours during August 2014. Collected data is included in **Appendix N**.

Existing (2014) Balanced Roadway Traffic Volumes

Traffic volumes for the peak hours identified from the 2014 air passenger activity data were reviewed for this traffic analysis. To estimate the balanced CTA roadway traffic for a typical Friday during August 2014, the intersection turning movement, loop detectors, and AVI counts provided by LAWA were compiled, reviewed, and analyzed to prepare a "balanced" roadway network of traffic activity during the 2014 peak hours. A balanced roadway network is simply a composite snapshot view of traffic activity throughout the CTA such that the addition or subtraction of traffic volumes including those entering and exiting the parking facilities within the CTA, remains in balance throughout the roadway system as lanes merge or diverge. In other words, there is an accounting and reconciliation of vehicles turning onto different routes within the CTA and arriving at and departing from the various curbside areas within the CTA.

4.12.1.2.4 Vehicle Trip Generation and Distribution Model

A vehicle trip generation and distribution model was developed to estimate future traffic volumes on the Airport's roadway system based on future passenger activities. The model was calibrated to the balanced 2014 CTA roadway vehicle volumes to ensure the model was accurately replicating 2014 conditions. The trip generation model outputs were compared to 2014 values to determine if the model-generated values were within an acceptable range. The trip generation model uses factors such as passenger arrival characteristics, vehicle volumes, mode split (i.e., the proportion of traffic volume composed of various modes including private vehicles, taxicabs, limousines, etc.), and vehicle occupancy characteristics to develop relationships between each of these factors. The relationships are used to program vehicle volumes from a passenger volume input. The estimated passenger mode choice percentages and vehicle occupancies used in the trip

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1 Unison Consulting, Inc., *Los Angeles International Airport 2011 Passenger Survey*, conducted between August 22 and August 28, 2011 (peak) as well as October 17 and October 24, 2011 (non-peak), August, 2012.

2 Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings*, February 2016.

generation model for both the passenger arrivals and departures peak hours were developed from data collected as part of this Project and the LAX 2011 Passenger Survey.

The vehicle trip generation and distribution model assigns each vehicle an origin, a destination, and a route through the CTA. The model estimates vehicle volumes on each roadway link within the CTA to allow spot checks, which ensure that the appropriate volume and type of vehicles are assigned to each link. Once the model is calibrated to existing conditions for the departures and arrivals peak hours, future passenger activity levels can be input into the model to project traffic volumes and vehicle composition on each link of the CTA roadway network. The purpose of developing the vehicle trip generation and distribution model is to have a tool that accurately estimates future vehicle volumes based on a future passenger volume. Before the model could be used to estimate future peak hour traffic volumes, it was necessary to calibrate the model to ensure that the results would reliably predict actual observed traffic conditions as represented by the balanced roadway volumes. This process involved comparing model output for the departures peak hour and the arrivals peak hours with roadway and intersection traffic data from the balanced roadway network.

Mode split data and drop-off/parking information for the departures peak hour, as well as the arrivals peak hour, were developed using data from both the LAX 2011 Passenger Survey and data collected as part of this analysis. Both models also included originating/terminating passenger splits by arrival mode based on the estimated percentages of vehicles entering/exiting the Airport via the upper level and lower level roadways. **Table 4.12.1-1** shows the passenger mode splits and the vehicle occupancies for existing conditions.

Table 4.12.1-1: Existing (2014) CTA Passenger Mode Splits and Vehicle Occupancies

	ARRIVALS LEVEL 1/		DEPARTURES LEVEL 2/	
PASSENGER TRANSPORTATION MODE	PASSENGER MODE SPLIT	VEHICLE OCCUPANCY (PASS/VEH)	PASSENGER MODE SPLIT	VEHICLE OCCUPANCY (PASS/VEH)
Charter Bus	7.27%	22.6	5.66%	33.8
FlyAway	2.04%	27.0	2.71%	27.8
Hotel Shuttles	2.04%	3.5	4.83%	3.9
LAX Shuttles	0.74%	2.5	2.10%	2.8
Limousines	2.91%	1.2	4.93%	1.1
Privately-Owned Vehicle (POV) (includes Parking and Paid Ride)	49.47%	1.3	52.80%	1.3
Private Parking Shuttles	3.12%	1.9	6.93%	3.4
Rental Car Shuttles	18.94%	18.6	9.84%	7.6
Shared Ride Vans	4.95%	6.0	3.67%	5.9
Taxi	7.74%	1.2	5.77%	1.2
Transit Bus	0.78%	10.3	0.76%	13.0
Total	100%		100%	

NOTES:

1/ Represents the passenger mode split and vehicle occupancy during the arrivals peak hour.

2/ Represents the passenger mode split and vehicle occupancy during the departures peak hour.

PASS/VEH = passengers per vehicle

SOURCE: Ricondo & Associates, Inc. May 2016
PREPARED BY: Ricondo & Associates, Inc. May 2016

4.12.1.2.5 Description of Future (2024) Traffic Conditions

For this traffic analysis, future traffic conditions were analyzed to address the impact of change in future traffic patterns as a result of the proposed Project by 2024. The mode shares and passenger growth assumptions used for future traffic generation are described in Section 4.12.1.8. Any reasonably foreseeable and funded roadway improvements were included as described in Section 4.12.1.6. For this traffic analysis, the traffic conditions were analyzed at all CTA intersections relative to two time periods under two conditions during the course of a day, as follows:

- Future (2024) Traffic during the Airport Departures Peak Without Project - This condition represents the future traffic activity during the peak hour for Airport passenger departures.
- Future (2024) Traffic during the Airport Arrivals Peak Without Project - This condition represents the future traffic activity during the peak hour for Airport passenger arrivals.
- Future (2024) Traffic during the Airport Departures Peak With Project - This condition represents the anticipated traffic activity during the peak hour for Airport passenger departures with the proposed future Project.
- Future (2024) Traffic during the Airport Arrivals Peak With Project - This condition represents the future traffic activity during the peak hour for Airport passenger arrivals with the proposed Project.

4.12.1.2.6 Description of Future (2035) Traffic Conditions

Similar to the 2024 conditions described above, the future (2035) conditions were analyzed to address the impact of change in future traffic patterns as a result of the proposed Project, as well as potential changes in peak traffic characteristics resulting from the increased passenger activity within the CTA forecasted to occur by 2035. The mode shares and passenger growth assumptions used for future traffic generation are described in Section 4.12.1.8. Any reasonably foreseeable and funded roadway improvements were included as described in Section 4.12.1.6.

- Future (2035) Traffic during the Airport Departures Peak Without Project - This condition represents the future traffic activity during the peak hour for Airport passenger departures.
- Future (2035) Traffic during the Airport Arrivals Peak Without Project - This condition represents the future traffic activity during the peak hour for Airport passenger arrivals.
- Future (2035) Traffic during the Airport Departures Peak With Project - This condition represents the future traffic activity during the peak hour for Airport passenger departures with the proposed Project.
- Future (2035) Traffic during the Airport Arrivals Peak With Project - This condition represents the future traffic activity during the peak hour for Airport passenger arrivals with the proposed Project.

4.12.1.2.7 Determination of Future (2024 and 2035) Traffic Volumes

The calibrated trip generation and trip distribution models for the 2014 departures and arrivals peak hours were used as a basis for estimating the peak hour CTA vehicle volumes for each of the future (2024 and 2035) conditions. As part of this process, adjustments were made to the 2014 passenger mode splits to reflect the two Intermodal Transportation Facilities (ITFs) and the Consolidated Rental Car Facility (CONRAC), and how changes to the regional transportation network, including Metro rail, would affect passenger mode choice and resultant vehicle activity at the Airport. The passenger mode splits represent the proportion of total airline passengers using each vehicle mode during the peak hours analyzed. The volume of vehicles by mode were determined based on a calibrated trip generation model constructed using the traffic data collected on August 8, 2014. This model used the LAX 2011 Passenger Survey as the basis for estimating the passenger mode splits. The 2024 and 2035 mode split estimates were calculated based on the general mode split trends derived between the LAX 2006 Passenger Survey[3], the LAX 2011 Passenger Survey[4] and the LAX 2015 Passenger Survey,[5] together with inputs from LAWA, including defining the modes predicted to be relocated to the each of the ITFs. The LAX 2011 Passenger Survey showed a decreasing trend among passengers using private vehicles, limousines, shared ride vans, and taxis. The LAX 2015 Passenger Survey further accelerated this decreasing trend with more passengers choosing Transportation Network Companies (TNCs) over private vehicles, limousines, taxis, and shared ride vans. Other modes were also marginally affected by the mode shift to the TNCs. The traffic volumes by mode for each of the ITFs were then estimated by using the mode splits derived as explained above and from the calibration parameters from the 2014 baseline calibrated model.

4.12.1.2.8 Description of Impacts

The on-Airport traffic analysis was conducted for key intersections in the CTA. Impact determination utilized the Circular 212 (C212) method[6], which analyzed intersections based on the critical movements that conflict with one another to determine the maximum amount of traffic throughput that can be attained in a given traffic signal cycle. Because the C212 method is a static intersection analysis method which calculates the Level of Service (LOS) based on the intersection being isolated from other traffic conditions in the vicinity, roadway links were also analyzed. Compared to off-Airport roadways, the on-Airport environment is unique and has a different set of constraints, such as downstream stoppages of traffic as a result of curbside operations, higher proportion of traffic that is unfamiliar with the roadways leading to slower speeds, constant need of decision-making as a result of signage, and a complex mix of vehicle modes. The roadway link analysis methodology takes into account the adjacent curbside utilization by reducing the link throughput capacity by a factor

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3 Applied Management and Planning Group, *2006 Air Passenger Survey Final Report Los Angeles International Airport*, conducted between July 31 and August 27, 2006 (peak) as well as October 03 and October 22, 2006 (non-peak), December 2007.

4 Unison Consulting, Inc., *Los Angeles International Airport 2011 Passenger Survey*, conducted between August 22 and August 28, 2011 (peak) as well as October 17 and October 24, 2011 (non-peak), August 2012.

5 Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Passenger Survey Results and Findings,* February 2016.

6 Transportation Research Board, *Transportation Research Circular 212, Interim Materials on Highway Capacity*, January 1980.

directly proportional to the adjacent curbside utilization. The roadway link analysis provides a more realistic picture of the traffic conditions in the CTA.

CTA Intersection Level of Service Analysis

Levels of service analyses for the signalized CTA intersections were prepared using TRAFFIX.® a commercially available traffic analysis program designed for preparing traffic forecasts and analyzing intersection and roadway capacity. (See Appendix N) Intersection LOS was estimated using the Critical Movements Analysis (CMA) also called C212 planning level methodology as defined in Transportation Research Board (TRB) Circular 212, in accordance with City of Los Angeles Department of Transportation (LADOT) Traffic Studies Policies and Procedures[7], and the L.A. CEQA Thresholds Guide.[8] Intersection LOS was analyzed for the peak hour conditions described below in Section 4.12.1.3.

The intersections on the departures level were analyzed during the Airport departures peak hour and the intersections on the arrivals level were analyzed during the Airport arrivals peak hour to identify potential effects. Major signalized intersections within the CTA were identified and analyzed according to the criteria established in the L.A. CEQA Thresholds Guide. Impacts were determined based on a comparison between Future (2024) Without Project conditions and Future (2024) With Project conditions as well as Future (2035) Without Project conditions and Future (2035) With Project conditions.

CTA Roadway Level of Service Analysis

Analyses of the key roadway links within the CTA were prepared by calculating the ratio of roadway volume to capacity (V/C). Traffic volumes were determined from the vehicle trip generation and distribution model described previously.

4.12.1.3 Existing Conditions

4.12.1.3.1 Traffic Analysis Study Area

The on-Airport traffic analysis study area is depicted on **Figure 4.12.1-1**. The CTA curbside and roadway system consists of a two-level roadway; the upper level is dedicated to departing passenger activities (and TNC passenger pick-ups as well as drop-offs), and the lower level is primarily dedicated to arriving passenger activities. The CTA roadway network provides access to the Airport's CTA public parking garages, which are intended to accommodate short-term and daily parking customers.

4.12.1.3.2 On-Airport Landside Facilities

The on-Airport landside facilities are composed of the CTA curbsides, roadways, and public parking facilities. The two-level on-Airport curbside and roadway network is primarily accessed from the following three off-Airport roadways: (1) Century Boulevard, (2) Sepulveda Boulevard, and (3) 96th Street Bridge/Sky Way.

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[7] Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.

[8] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

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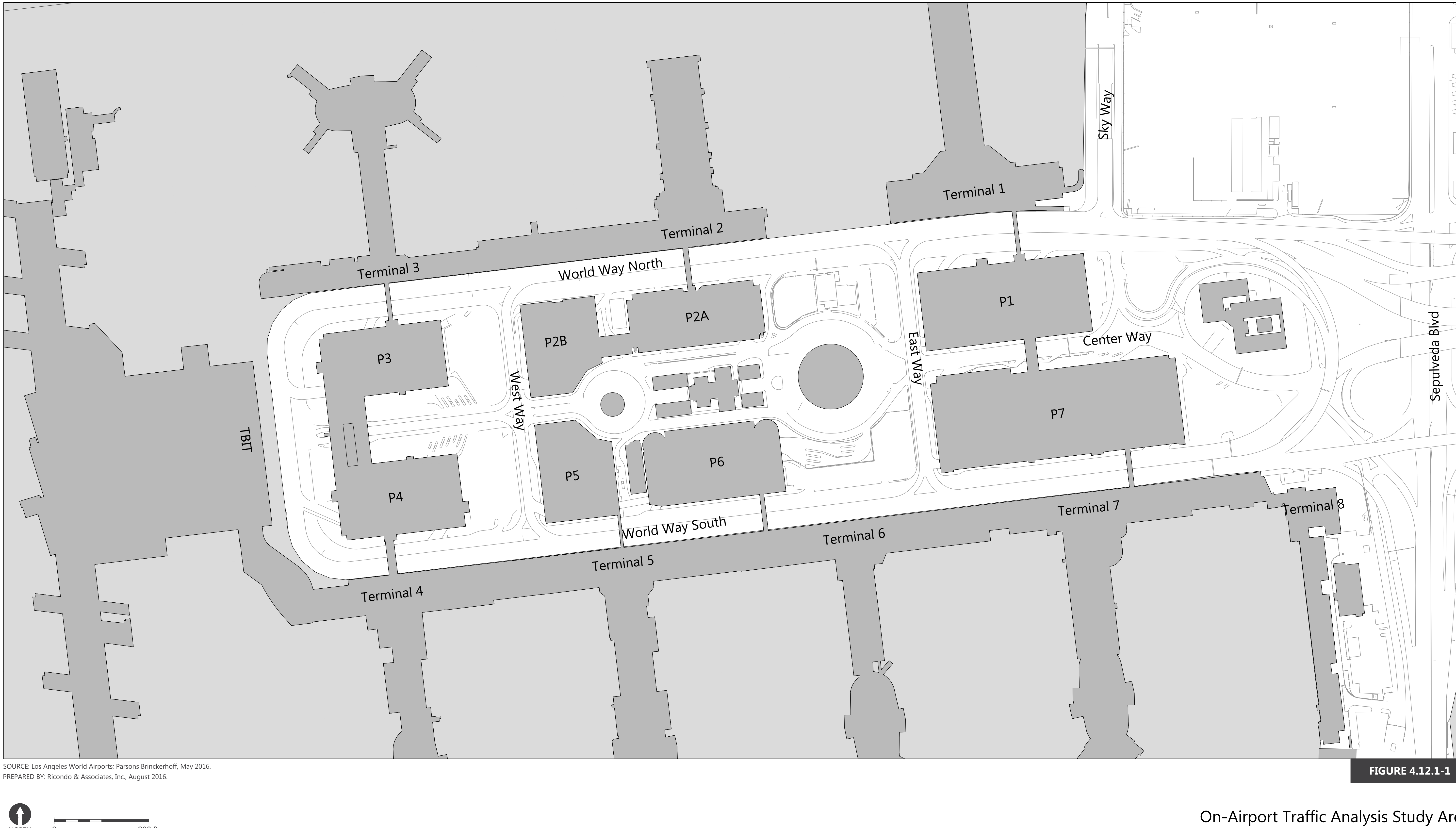

SOURCE: Los Angeles World Airports; Parsons Brinckerhoff, May 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.1-1

On-Airport Traffic Analysis Study Area

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Each of these roadways provides vehicular access to both the departures level and the arrivals level curbsides and roadways. On-Airport access from the departures level to the arrivals level is provided via a recirculation ramp located at the eastern end of the CTA and a ramp at the western end of Center Way connecting to West Way on the departures level. Access from the arrivals level to the departures level is provided via this same ramp at the western end of Center Way connecting to West Way on the departures level. Both the departures level and arrivals level roadways are signed for a speed limit of 25 miles per hour (mph).

4.12.1.3.3 Peak Month Activity

Monthly traffic data in the vicinity of LAX over the past nine years were reviewed to identify the typical peak month of traffic activity associated with Airport operations. The average daily traffic (ADT) volumes accessing the CTA by month for 2006 through 2014 are provided in **Table 4.12.1-2**. As shown in bold within Table 4.12.1-2, CTA traffic reached peak activity during the summer months of June, July and August. August is typically the peak month for Airport roadway traffic followed closely by July. For the purpose of this analysis, August 2014 was used as the peak month for traffic data, because the field data was collected in August. Although July had slightly more passengers in 2014, the analysis was based on a peak month average day in August. The passenger volumes are within 0.5 percent of July data, and for modeling calibration purposes, it was determined better to utilize actual collected data (from August 2014) than to interpolate the August mode share data to a different month.

Table 4.12.1-2: CTA Average Daily Traffic Volumes

MONTHLY TRAFFIC	2006	2007	2008[1]	2009	2010	2011	2012	2013	2014
January	67,727	66,999	67,483	63,012	64,431	66,477	N/A[2/]	57,985	71,268
February	63,715	65,339	64,924	61,899	60,857	62,322	N/A[2/]	62,578	66,793
March	69,034	68,380	69,819	64,504	65,057	66,115	N/A[2/]	68,228	72,828
April	69,230	70,268	69,184	67,410	65,825	67,487	N/A[2/]	69,388	73,639
May	70,303	71,599	72,022	68,964	67,787	71,588	N/A[2/]	72,297	76,674
June	72,647	73,669	75,118	73,221	74,578	**76,035**	N/A[2/]	**77,791**	82,022
July	75,895	78,342	75,640	74,975	**75,881**	71,552	N/A[2/]	77,244	**82,282**
August	**78,236**	**82,193**	**76,434**	**77,062**	74,758	73,930	**73,990**	77,346	81,846
September	67,171	68,316	65,227	66,106	67,354	65,578	66,353	70,232	74,206
October	66,981	68,152	64,260	66,173	66,674	62,080	67,713	70,463	74,267
November	70,326	72,098	64,128	66,116	66,805	N/A[2/]	69,325	69,160	74,550
December	71,978	71,900	70,972	71,006	69,205	N/A[2/]	70,483	77,724	77,908
Average Daily Traffic [1/]	70,329	71,492	69,639	68,426	68,324	N/A[2]	N/A[2]	70,870	75,690
% Annual Change	1.30%	1.70%	-2.60%	-1.70%	-0.10%	N/A[2]	N/A[2]	6.1%	6.8%
Million Annual Passengers	61.0	62.4	59.8	56.5	59.1	61.9	63.73	66.7	70.7
% Annual Change	-0.80%	1.50%	-4.20%	-5.50%	4.60%	4.70%	2.90%	4.7%	6.0%

NOTES:

1/ Estimates for average daily traffic are calculated by weighting the monthly average daily traffic volumes by the number of days in the month. The month of February had 29 days in 2008 and 2012.

2/ Accurate average daily traffic volumes were not available for November 2011 through July 2012 due to transition to new vehicle detection equipment.

SOURCE: City of Los Angeles, Los Angeles World Airports, *LAX 2010 Ground Transportation Report,* March 2011.

PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.3.4 Data Collection and Data Sources

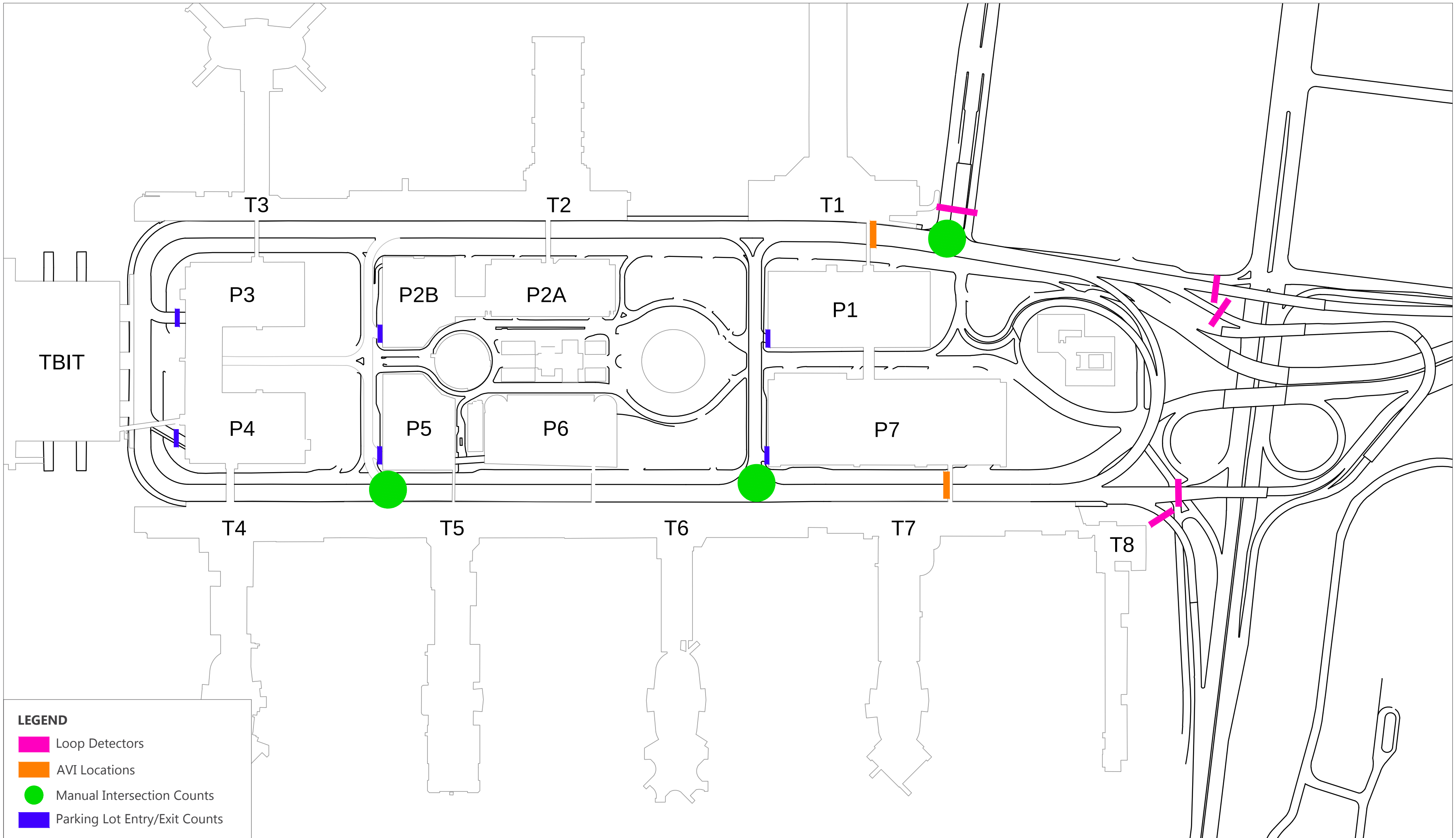
LAWA records were the primary source of the traffic data, facility drawings, and traffic signal timing plans for this traffic analysis. To supplement this data, detailed field surveys of both the departures and arrivals level curbsides and roadway systems were conducted to ensure a clear understanding of the existing (2014) conditions and commercial vehicle, private vehicle, and passenger operations. As described above, the data provided by LAWA staff were used to create a snapshot of vehicle and passenger activity for a typical Friday in August 2014. LAWA provided the following data, which is available in Appendix N:

- August 2014 airline passenger schedule;
- Passenger load factors;
- LAX 2011 Passenger Survey;
- CTA vehicle counts;
- CTA vehicle classification which includes other category counts comprised of private vehicles, rental cars, service vehicles, and any other vehicle not equipped with an Automated Vehicle Identification transmitter; and
- Parking structure vehicle count data.

Figure 4.12.1-2 and **Figure 4.12.1-3** identify the locations where the traffic data were collected within the CTA. In addition to the above data, automated traffic counts were collected on the southbound Sepulveda Boulevard exit ramp and eastbound Century Boulevard exits. These tube counts were collected in August 2014 to serve as a control point to the automatic loop detector counts. By comparing the tube counts to the automated loop detector counts, any errors in the loop detectors were determined. An error correction was then applied to adjust loop counts when they were used in the model to balance traffic.

4.12.1.3.5 Traffic Analysis Peak Hours

The August 2014 airline schedule was used to estimate a rolling hour of departing (i.e., outbound flight) and arriving (i.e., inbound flight with LAX as the final destination) passenger volumes for each terminal. Departing (originating) passenger volumes throughout each hour of the day were adjusted to account for the time passengers arrived at the curbside prior to the departure time of their flight. These adjustments were made based on "early arrivals curves" derived from the LAX 2011 Passenger Survey. Early arrivals curves refer to the timing of passenger demand from the flight schedule adjusted to account for the time originating passengers arrive at the Airport prior to their flight (i.e., "lead time"). These curves took into account the differences in domestic and international passenger early arrival characteristics as well as the differences by the time of day. Similarly, arriving (terminating) passenger volumes from the airline schedule were adjusted to represent the time passengers arrived at the curbside following the arrival of their flight. Terminating passenger arrivals curves were used to reflect domestic passenger arrivals characteristics at LAX. The terminating passenger arrivals curves refer to time allotted for terminating passengers to travel from their gate to the arrivals level curbside (i.e., "lag time").



SOURCE: Los Angeles World Airports; Ricondo & Associates, Inc., May 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

NORTH 0 500 ft.

Figure 4.12.1-2

CTA Data Collection Locations
Departures Level

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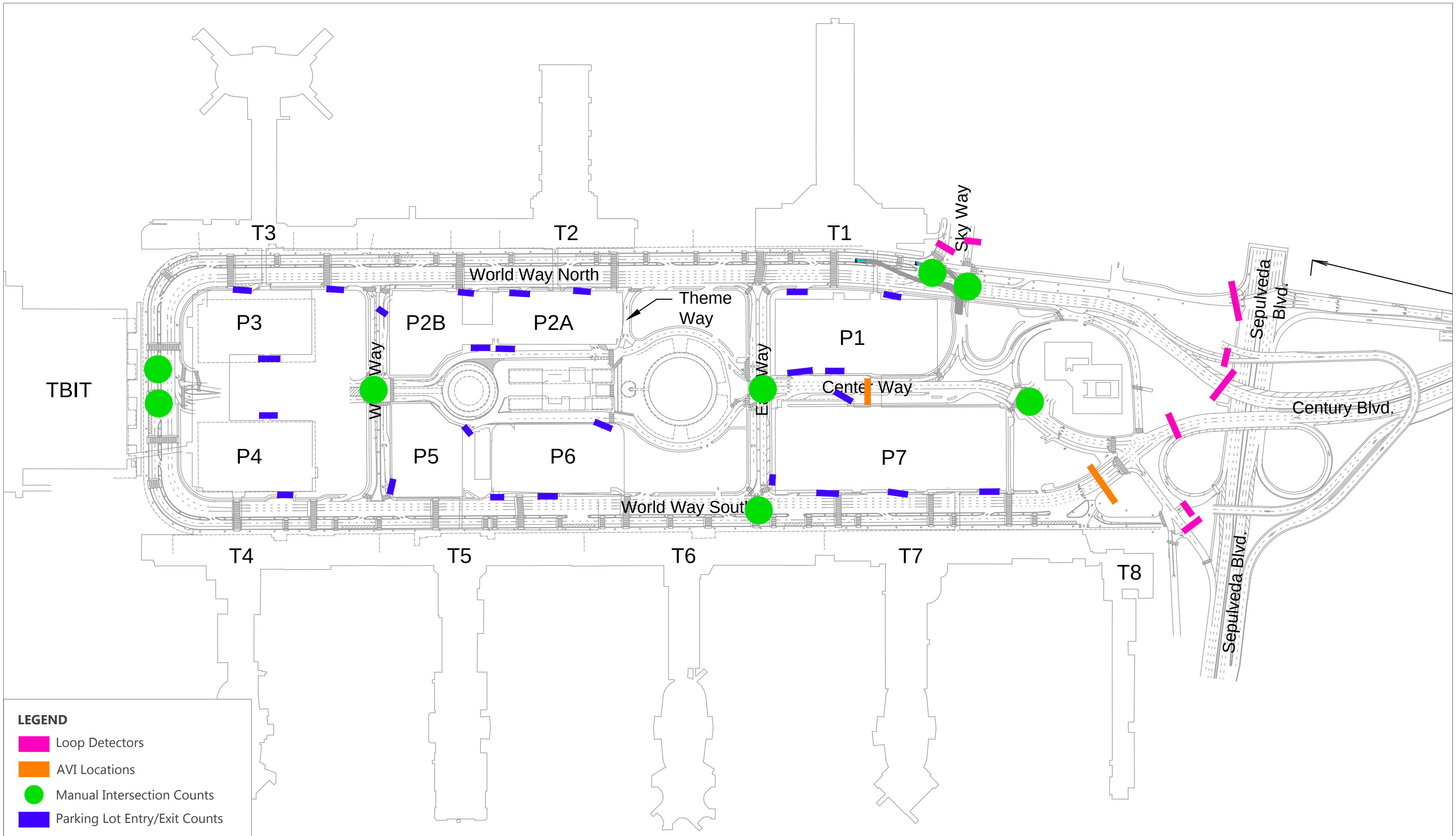

SOURCE: Los Angeles World Airports; Ricondo & Associates, Inc., May 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Figure 4.12.1-3

CTA Data Collection Locations
Arrivals Level

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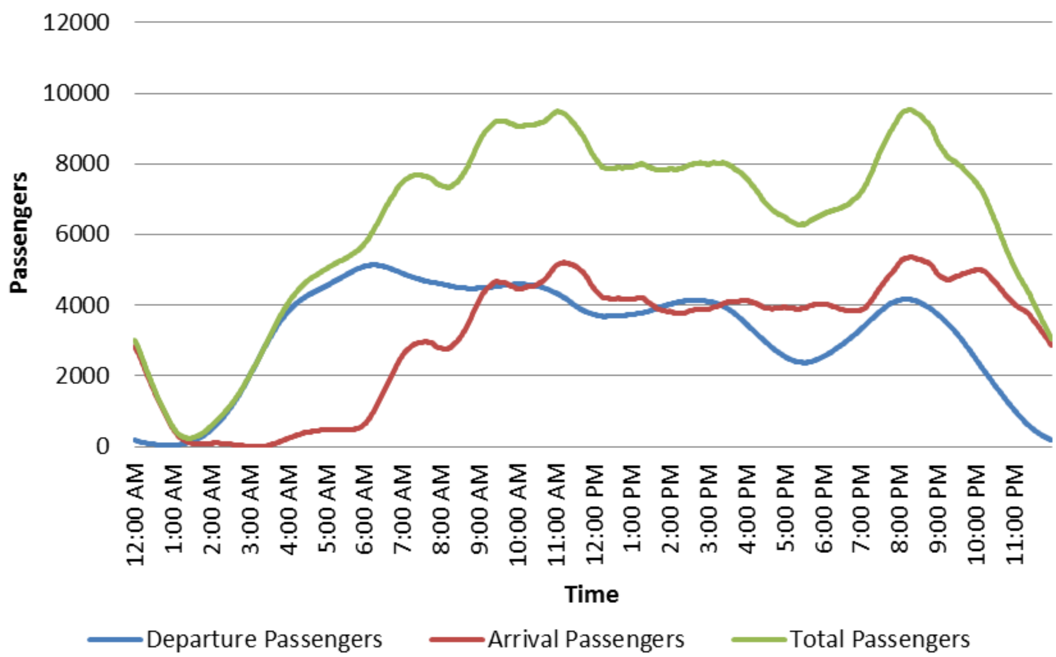
The international arriving passenger data used for this analysis for both the existing and future conditions was generated based on: (a) the existing geometric configuration and operational conditions; and (b) future configurations, aircraft fleet mixes, and operational conditions. Departing and arriving passenger volumes at the curbside were calculated for domestic and international passengers for a 24-hour period in 1-minute increments. Each sixty successive 1-minute passenger counts were added to generate a rolling hourly passenger count total. From these data, the departures and arrivals peak hour passenger volumes by time of day were determined. **Figure 4.12.1-4** depicts the rolling hourly departing and arriving passenger flows in 2014 for the CTA curbside. **Table 4.12.1-3** summarizes the 2014 Airport passenger arrivals and departures peak hours.

Figure 4.12.1-4: Existing (2014) Rolling Hour Departure and Arrival Passengers Volumes



SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

Table 4.12.1-3: Summary of Existing Conditions (2014) Airport Peak Hours

EXISTING (2014)	AIRPORT PEAK HOUR	TOTAL PASSENGERS
Arrivals	8:18 p.m. - 9:18 p.m.	5,369
Departures	6:16 a.m. - 7:16 a.m.	5,142
Overall Airport	8:18 p.m. - 9:18 p.m.	9,534

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.3.6 Vehicle Trip Generation and Distribution Model

As explained in Section 4.12.1.2, a vehicle trip generation and distribution model was developed to estimate future traffic volumes on the Airport's roadway system based on future passenger activities. The model was calibrated to the balanced 2014 CTA roadway vehicle volumes to ensure the model was accurately replicating 2014 conditions.

4.12.1.4 Analysis of Existing Conditions

This section describes how the results from the vehicle trip generation and TRAFFIX® models were used to characterize 2014 traffic conditions for intersection capacity of the key CTA intersections.

4.12.1.4.1 CTA Intersection Existing Conditions

This section describes the operating conditions of key signalized CTA intersections using the 2014 traffic volumes as defined in Section 4.12.1.3. All of the study area intersections were analyzed with TRAFFIX®, except for the intersection of World Way South and Center Way which was analyzed using Synchro 7, another widely accepted transportation analysis model. The intersection of World Way South and Center Way is a five-legged intersection and TRAFFIX software is not equipped to analyze intersections with more than four legs. Therefore, Synchro 7 was used to analyze this intersection.

Intersection LOS is a qualitative measure that describes traffic operating conditions at an intersection (e.g., delay, queue lengths, congestion). Intersection levels of service range from “A” (i.e., excellent conditions with little or no vehicle delay) to “F” (i.e., excessive vehicle delays and queue lengths). Levels of service definitions for the CMA methodology are presented in **Table 4.12.1-4**. The analysis evaluated the intersection's V/C and LOS conditions using the CTA roadway traffic volumes for the 2014 conditions, as provided in **Table 4.12.1-5** for the Airport peak departures and arrivals hours. With the exception of World Way South and Center Way (Exit) on the lower level, which operates at an LOS of B, all other intersections operated at LOS A.

[Draft]

Table 4.12.1-4: Level of Service Definitions for Signalized Intersections

LEVEL OF SERVICE (LOS)	VOLUME/CAPACITY RATIO RANGE	DEFINITION
A	0 - 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 – less than 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 or equal to 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. May 2016.

Table 4.12.1-5: Peak Hour CTA Signalized Intersection Turning Movement Volumes and Level of Service Analysis - Existing (2014) Conditions

		EXISTING (2014)													
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
INTERSECTION	PEAK HOUR[1/]	L	T	R	L	T	R	L	T	R	L	T	R	V/C[2/]	LOS[3/]
World Way North and Sky Way (Upper Level)	Departure						916					1,954		0.428	A
World Way South and West Way (Upper Level)	Departure				528				1,502					0.394	A
World Way South and East Way (Upper Level)	Departure				523			88	1,924					0.448	A
World Way North and Sky Way (Lower Level)	Arrival	270	140				932					1,851		0.561	A
World Way South and Center Way (Exit) (Lower Level)[4]	Arrival	270	1,114	888					834	636				0.68	B
East Way and World Way South (Lower Level)	Arrival				475			157	1,588					0.439	A

NOTES:

1/ The departures peak hour occurred from 6:16 a.m. to 7:16 a.m. The arrivals peak hour occurred from 8:18 p.m. to 9:18 p.m.

2/ Volume to capacity ratio.

3/ Level of Service range: A (excellent) to F (failure).

4/ For the World Way South and Center Way intersection, World Way South volumes are noted in the Northbound column and Center Way volumes are noted in the Eastbound column of the table.

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.4.2 CTA Roadway Existing Conditions

In order to analyze the operating conditions along the Airport roadway system, the calculated volume of traffic using each roadway link was compared to the capacity of the roadway at that particular location. The capacities of the roadway links were determined based on the characteristics of the roadway link, the number of travel lanes provided, and the effects of curbside congestion. Based on the Highway Capacity Manual, Special Report 209,[9] the theoretical capacity of a roadway is the maximum hourly flow rate per lane under "ideal" conditions comprised of: (a) uninterrupted flow; (b) all passenger cars comprised of drivers that are frequent users of the roadway; (c) 12-foot minimum lane width; (d) relatively flat grades with minor curvature; and (e) optimal lateral clearance between the edge of lane and from nearby obstacles and walls.

For airport roadways, however, capacities are substantially lower, as many of the "ideal" conditions listed above cannot be attained. For example, drivers are often unfamiliar with the roadway system. Also, increased interaction and impedances between vehicles usually results in drivers slowing to change lanes or maneuver in response to signage describing multiple on-airport destinations occurring over relatively short distances. Since airport curbsides accommodate relatively intense activity occurring over a relatively compact area, curbside roadway throughput capacities are much lower than provided on non-airport roadway systems. The throughput capacity of roadways adjacent to a curbside is a function of the number of lanes, effects of friction (slowing down of through vehicles) from stopped and maneuvering vehicles, pedestrian crossing activity, and other characteristics. Consequently, curbside roadway throughput capacity decreases as curbside utilization increases (i.e., double and triple parking increases which slows vehicles trying to pass). Therefore, the throughput capacity for each lane is related to the level of congestion at the adjacent curbside. **Figure 4.12.1-5** illustrates the relationship of curbside roadway throughput capacity as a function of curbside utilization.

Table 4.12.1-6 provides the roadway V/C ratio used to determine a roadway link's LOS. As discussed previously, the capacities of all travel lanes adjacent to a curbside are dependent on the adjacent curbside's utilization rate or level of congestion. For LOS determinations of the CTA roadway links, the values identified in Table 4.12.1-6 were used. The analysis evaluated the key roadway link V/C and LOS conditions using the CTA roadway traffic volumes for the 2014 conditions, as provided in **Table 4.12.1-7** for the Airport peak departures and arrivals hours. As shown in Table 4.12.1-7, over half of the CTA roadway links (13 out of 24) operated at LOS E or F at certain times of the day.

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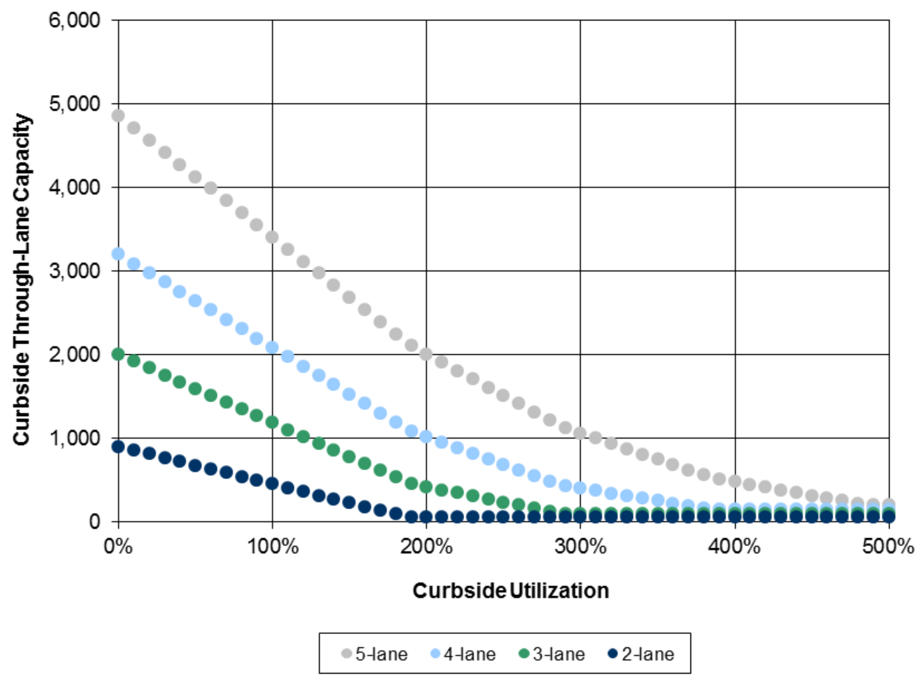
9 Transportation Research Board, Highway Capacity Manual, Special Report 209: Chapter2 – Capacity and Level of Service Concepts, pp. 2-3 and 2-4, 2000.

Figure 4.12.1-5: Curbside Roadway Throughput Capacity as a Function of Curbside Utilization



NOTE: Legend includes number of lanes including the curbside loading/unloading lane

SOURCE: Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Report 40, Airport Curbside and Terminal Area Roadway Operations* 2010.

PREPARED BY: Ricondo & Associates, Inc. April 2016

Table 4.12.1-6: Roadway Level of Service and Volume to Capacity (V/C) Ratio Ranges

LOS	V/C RATIO	CONDITIONS	DESCRIPTION
A	less than 0.60	EXCELLENT	Traffic is free flow, with low volumes and high speeds
B	0.61 - 0.70	VERY GOOD	Drivers have reasonable freedom to select their speed and lane of operation
C	0.71 - 0.80	GOOD	Drivers are becoming restricted in their ability to select their speed or to change lanes
D	0.81 - 0.90	FAIR	Drivers have little freedom to maneuver and driving comfort levels are low
E	0.91 – less than 1.00	POOR	Roadway is operating at or near capacity
F	greater than or equal to 1.00	FAILURE	Forced flow operation where excessive roadway queuing develops

SOURCE: Transportation Research Board, *Transportation Research Circular No. 212, Interim Materials on Highway Capacity*, January 1980.

PREPARED BY: Ricondo & Associates, Inc. April 2016.

[Draft]

Table 4.12.1-7: Peak Hour CTA Roadway Volumes and Level of Service Analysis - Existing (2014) Conditions

ROADWAY LINK	2014 VOLUMES	2014 ROADWAY V/C	2014 LOS
DEPARTURES			
Upper Level Roadway Link Adjacent to Terminal 1	2,870	0.92	E
Upper Level Roadway Link Adjacent to Terminal 2	2,327	0.96	E
Upper Level Roadway Link Adjacent to Terminal 3	1,577	0.85	D
Upper Level Roadway Link Adjacent to TBIT	1,483	0.71	C
Upper Level Roadway Link Adjacent to Terminal 4	1,400	0.75	C
Upper Level Roadway Link Adjacent to Terminal 5	2,050	1.17	F
Upper Level Roadway Link Adjacent to Terminal 6	2,050	0.98	E
Upper Level Roadway Link Adjacent to Terminal 7	2,460	1.12	F
ARRIVALS			
Roadway Link Adjacent to Terminal 1 Lower Level Inner Curbside	601	0.32	A
Roadway Link Adjacent to Terminal 2 Lower Level Inner Curbside	530	0.40	A
Roadway Link Adjacent to Terminal 3 Lower Level Inner Curbside	473	0.20	A
Roadway Link Adjacent to TBIT Lower Level Inner Curbside	489	0.21	A
Roadway Link Adjacent to Terminal 4 Lower Level Inner Curbside	666	0.36	A
Roadway Link Adjacent to Terminal 5 Lower Level Inner Curbside	744	0.57	A
Roadway Link Adjacent to Terminal 6 Lower Level Inner Curbside	220	0.09	A
Roadway Link Adjacent to Terminal 7 Lower Level Inner Curbside	536	0.14	A
Roadway Link Adjacent to Terminal 1 Lower Level Outer Curbside	2,394	1.04	F
Roadway Link Adjacent to Terminal 2 Lower Level Outer Curbside	2,085	0.94	E
Roadway Link Adjacent to Terminal 3 Lower Level Outer Curbside	1,782	0.96	E
Roadway Link Adjacent to TBIT Lower Level Outer Curbside	1,578	1.00	E
Roadway Link Adjacent to Terminal 4 Lower Level Outer Curbside	1,300	1.34	F
Roadway Link Adjacent to Terminal 5 Lower Level Outer Curbside	1,740	0.91	E
Roadway Link Adjacent to Terminal 6 Lower Level Outer Curbside	1,903	1.40	F
Roadway Link Adjacent to Terminal 7 Lower Level Outer Curbside	1,863	2.37	F

NOTE: The departures peak hour occurred from 6:16 a.m. to 7:16 a.m. The arrivals peak hour occurred from 8:18 p.m. to 9:18 p.m.

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.5 CEQA Thresholds of Significance

To assess impacts at the CTA intersections, LOS thresholds defined in the LADOT Traffic Study Policies and Procedures[10] were used to determine if an impact was generated by the proposed Project. Based on the LADOT definition, an impact is considered to be significant if one of the following thresholds is met or exceeded:

- The LOS is C, its final V/C ratio is 0.701 to 0.800, 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 0.900, 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 that includes traffic volumes from the proposed Project, existing (2014) traffic, ambient background growth, and other related projects, but without any proposed traffic mitigation. The Project-related increase is defined as the change in V/C between the future V/C ratio under the Without Project and With Project conditions, without any proposed traffic mitigation. (i.e., the change in the unmitigated LOS condition between [a] the V/C for Future (2024) Without Project conditions, and [b] the V/C for Future (2024) With Project conditions and a similar comparison for Future (2035) with and without Project conditions).

The LADOT thresholds listed above are designed for assessing impacts associated with intersections and roadways where the V/C ranges are based on an established scale between 0.000 and 1.000 (i.e., capacity), with the interim LOS ranges (e.g., LOS B to C, LOS C to D) increasing in increments of 0.1.

4.12.1.6 On-Airport Transportation System Improvements

- The following describes the on-Airport transportation system improvements included in the 2024 and 2035 Without Project traffic analysis conditions, and how such improvements would affect passenger flow and vehicle operations. As identified in Table 3-1 in Chapter 3, *Overview of Project Setting*, LAWA has planned airport improvement projects outside the scope of the proposed Project; it is reasonably foreseeable that they would be in place either by 2024 or by 2035. Ground transportation improvements assumed under the Without Project scenario are:
  - Commercial Vehicle Holding Lot Relocation. The existing current vehicle holding lot would be relocated to Lot E or to the area known as "Manchester Square."

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10 Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014. Thresholds are the same as the thresholds in the L.A. CEQA Thresholds Guide.

- Policy Changes to Bus Operations in the CTA. To provide for more efficient operations through the CTA, single-level busing would be implemented. Private parking shuttles would be relegated to the upper level, while hotel shuttles would use the lower level.
- Parking Garage Reconstruction. Parking Garages P2B and P5 would be demolished and reconstructed in their existing location.

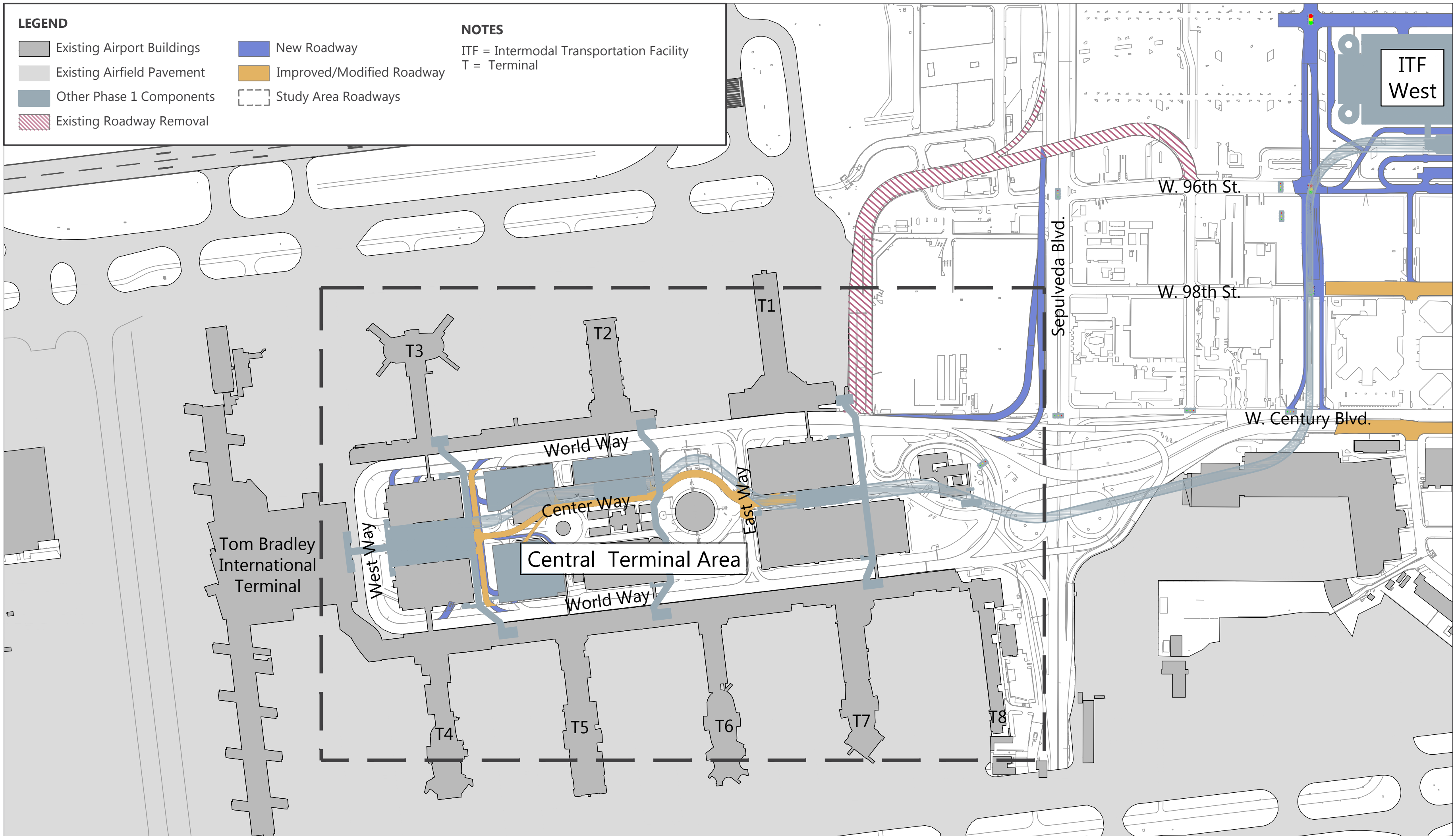
These same improvements are included in the No Project Alternative described in Chapter 5. These improvements are not included in the existing (2014) conditions analysis.

4.12.1.7 Project-Related Improvements

The following describes the on-Airport transportation system improvements included in the 2024 and 2035 With Project traffic analysis conditions, and how such improvements would affect passenger flow and vehicle operations. **Figure 4.12.1-6** shows the improvements to the Airport area roadways proposed to be implemented by 2024.

The proposed roadway improvements are designed to reduce congestion and enable passengers to more efficiently access LAX. These proposed improvements include, among others, new roadway segments, additional lanes, realignment of segments of existing roads, restriping, modified freeway ramps, new or realigned driveways, roadway closures, streetscape improvements, landscaping, and intersection improvements. Please see Section 2.4.4 in Chapter 2, *Description of the Proposed Project*, for more information regarding the proposed improvements to the Airport area roadways. The proposed roadway improvements to the Airport area roadways proposed to be implemented by 2035 are shown on **Figure 4.12.1-7**. This on-Airport analysis considered the effects of these roadway improvements in terms of changes to vehicle access or exit patterns to and from the CTA.

- On-Airport roadway improvements proposed through 2024 include:
  - Southbound S. Sepulveda Boulevard to World Way (departures and arrivals) Ramps
  - Center Way between West Way and East Way
- In addition to the above on-Airport roadway improvements, the following roadways would be removed or modified:
  - W. 96th Street/Sky Way Bridge would be removed
  - W. Century Boulevard west of S. Sepulveda Boulevard would be removed
- In order to provide curbfront to the West CTA Automated People Mover (APM) Station, West Way is proposed to be relocated approximately 200 feet to the west, adjacent to the pedestrian walkway connecting parking garages P3 and P4 and Terminals T3 and T4. West Way is proposed as a two-level, two lane roadway with an added drop-off lane on the west side and an added lane for ingress into the parking garages to the east for the upper level only. The proposed roadway would be configured to accommodate southbound travel only at both levels. Access to new garages P2B and P5 would be accommodated at both levels off of West Way.



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, March 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.1-6

Roadway Improvements
Phase I (2024)

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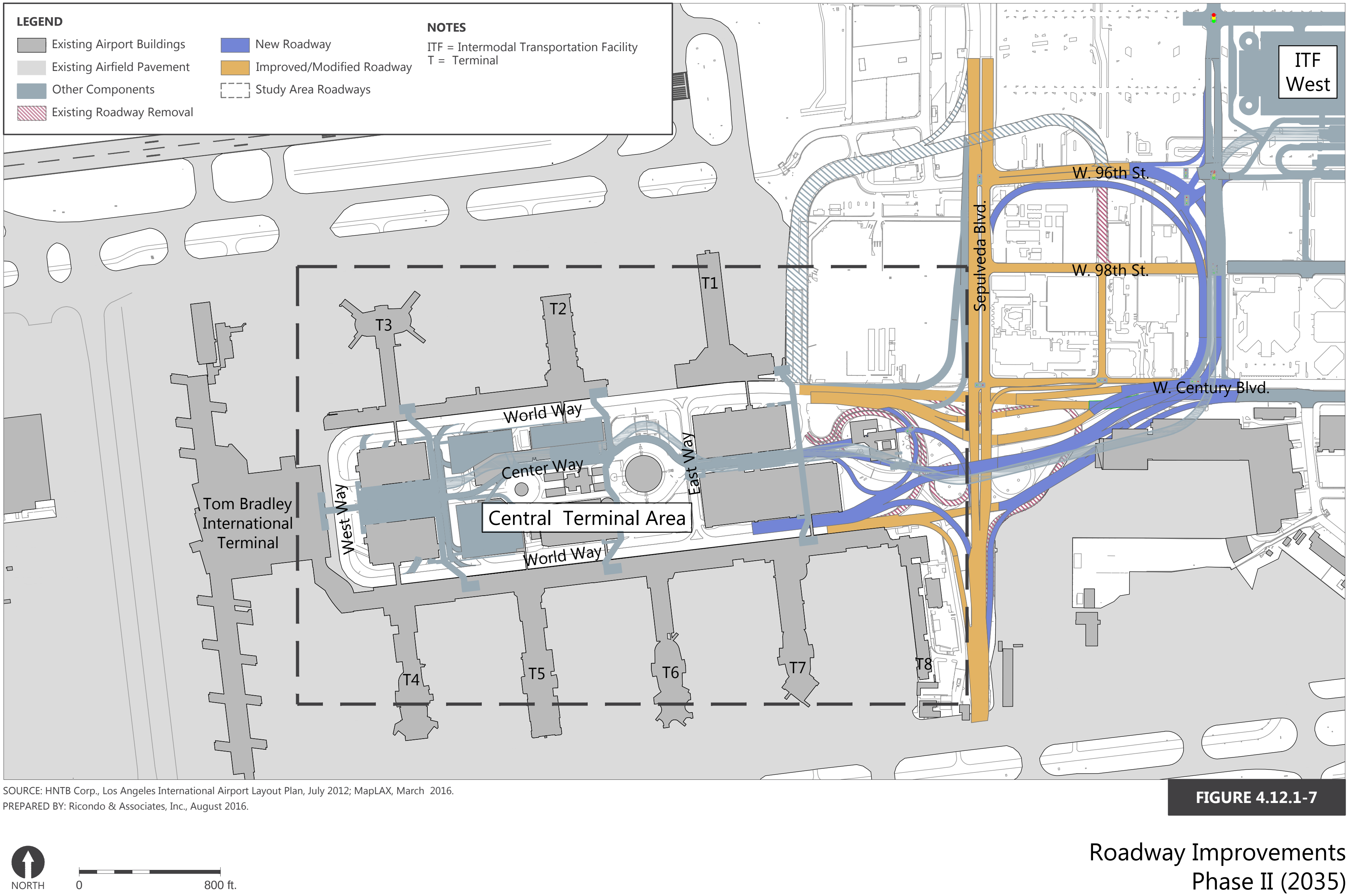

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, March 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.1-7

Roadway Improvements Phase II (2035)

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- On-Airport roadway improvements proposed through 2035 include:
  - Westbound W. Century Boulevard (New 'A' Street to World Way)
  - Westbound W. Century Boulevard Viaduct to World Way
  - Northbound S. Sepulveda Boulevard to eastbound W. Century Boulevard Ramp
  - Eastbound World Way (Departures) to northbound S. Sepulveda Boulevard Ramp
  - Eastbound World Way (Arrivals) to southbound S. Sepulveda Boulevard Ramp
  - Eastbound World Way (Departures) to southbound S. Sepulveda Boulevard Ramp (join existing ramp)
  - Eastbound Center Way to southbound S. Sepulveda Boulevard Ramp
  - Eastbound World Way (Arrivals & Departures) to eastbound W. Century Boulevard and to northbound New 'A' Street
- In addition to the above new roadways, the following roadways would be removed or modified in 2035:
  - Return road connecting World Way South and World Way North would be modified to form an intersection with Center Way to southbound S. Sepulveda Boulevard ramp. This intersection would likely be signalized.
  - Loop ramp from southbound S. Sepulveda Boulevard to W. Century Boulevard would be removed.

4.12.1.8 Future (2024) Traffic Conditions

4.12.1.8.1 Determination of 2024 Analysis Peak Hours

To determine the peak hours for the 2024 Without Project and the 2024 With Project conditions, the 2024 design day passenger schedule for LAX was developed. The FAA's Terminal Area Forecast[11] for LAX in 2024 was converted to peak month average day (PMAD) levels to forecast activity at the Airport for a typical Friday in August. To develop the 2024 Without Project and With Project traffic volumes used to evaluate the CTA's future landside operations, a flight schedule representative of passenger activity level of 86 million annual passengers (MAP) was used.[12] The passenger schedule for 2024 Without Project and With Project conditions was the same, as the proposed Project would not affect the number or type of aircraft operations or passenger activity levels at LAX.

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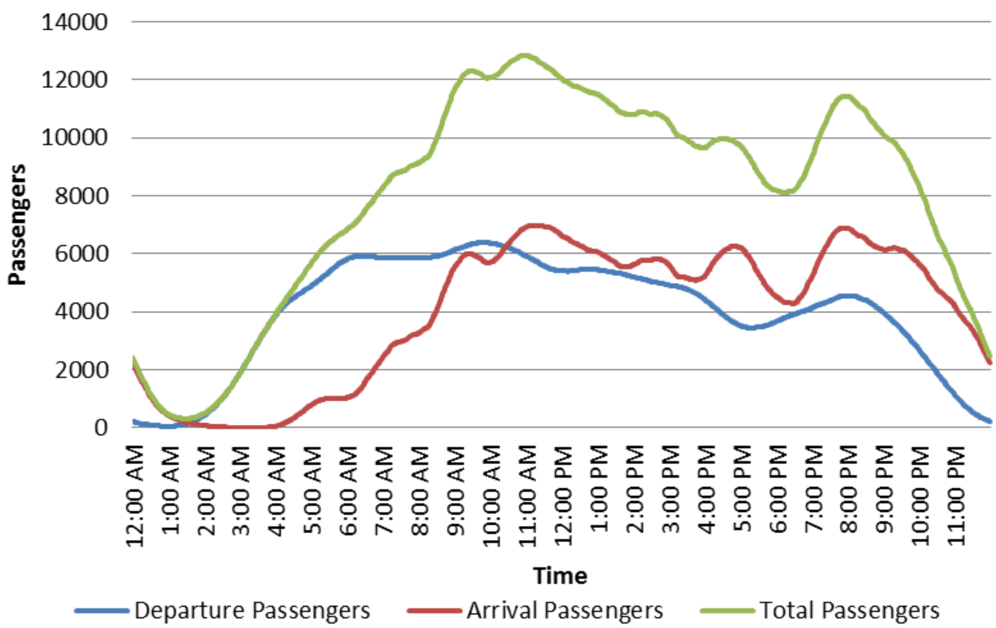
[11] Federal Aviation Administration, *APO Terminal Area Forecast*, January 2015.

[12] Ricondo & Associates, Inc., *LAX 2024 and 2035 Passenger Flight Schedules*, August 2016.

Figure 4.12.1-8 depicts the rolling hourly terminating and originating passenger flows at the CTA curbsides for the future 2024 conditions. The passenger flows show that in 2024, there would be two pronounced peaks in passenger activity on the arrivals level curbsides with the peak hour occurring from 11:15 a.m. to 12:15 p.m. resulting in a total of 6,976 passengers on the curbside. Similarly, departing passenger flows show that in 2024, the peak hour would occur between 9:51 a.m. to 10:51 a.m. with a total of 6,377 passengers on the curbside.

Figure 4.12.1-8: Future (2024) Rolling Hour Departure and Arrival Passengers Volumes



SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.8.2 Determination of Future (2024) Traffic Volumes

The calibrated trip generation and trip distribution models for the 2014 departures and arrivals peak hours were used as a basis for estimating the peak hour CTA vehicle volumes for each of the future (2024) conditions. As part of this process, adjustments were made to the 2014 passenger mode splits to reflect the two ITFs and CONRAC, and how changes to the regional transportation network would affect passenger mode choice and resultant vehicle activity at the Airport (see Section 4.12.1.9.1 for methods used to adjust 2024 mode splits). **Table 4.12.1-8** and **Table 4.12.1-9** present the passenger mode splits used to estimate the CTA traffic volumes in 2024 on the departures level and arrivals level, respectively. The passenger mode splits represent the proportion of total airline passengers using each vehicle mode during the peak hours analyzed. The tables also present the modes picking-up or dropping-off passengers at either of the ITFs or CONRAC. These passengers would use the APM to access the CTA.

[Draft]

Table 4.12.1-8: Future (2024) Mode Share – Departing Passengers

		FUTURE (2024) W/ PROJECT					
	EXISTING (2015)	TOTALS	CTA	ITF WEST (APM)	ITF EAST (APM)	CONRAC (APM)	FUTURE (2024) W/O PROJECT
MODE	**MODE SHARE**	**MODE SHARE**	**MODE SHARE**	**MODE SHARE**	**MODE SHARE**	**MODE SHARE**	**MODE SHARE**
Private Vehicle - Pick-Up/Drop-Off	36.20%	35.18%	32.92%	1.13%	1.13%		35.18%
Private Vehicle - Parking	11.70%	9.65%	4.52%	4.27%	0.85%		9.65%
Charter Van	6.80%	6.80%					7.03%
Taxi	5.80%	5.79%	14.91%[1]	7.41%[1]	2.93%[1]		5.79%
Paid Ride (TNC)	6.90%	10.03%					10.47%
Limo/Town Car	3.00%	2.62%					2.62%
Shared Ride Van	3.60%	3.17%			3.17%		3.26%
Rental Car Shuttle	21.00%	21.00%				21.00%	21.00%
Hotel Shuttle	2.10%	2.11%		2.11%			
FlyAway	1.50%	1.54%	1.54%				2.11%
Charter Bus	0.80%	0.79%			0.79%		1.60%
Transit	0.50%	1.30%			1.30%		0.79%
Total CTA	100.00%	100.00%	53,89%				0.49%
Total Non-CTA (APM)				14.92%	10.17%	21.00%	

NOTE:

1/ Taxi and TNC services are substantially similar and were treated as such for this part of the analysis.

SOURCE: Ricondo & Associates, Inc. in consultation with MapLAX team and LAWA staff, May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

Table 4.12.1-9: Future (2024) Mode Share – Arriving Passengers

<table>
<tr><th></th><th></th><th colspan="5">FUTURE (2024) W/ PROJECT</th><th></th></tr>
<tr><th></th><th>EXISTING (2015)</th><th>TOTALS</th><th>CTA</th><th>ITF WEST (APM)</th><th>ITF EAST (APM)</th><th>CONRAC (APM)</th><th>FUTURE (2024) W/O PROJECT</th></tr>
<tr><th>MODE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th></tr>
<tr><td>Private Vehicle - Pick-Up/Drop-Off</td><td>35.20%</td><td>33.84%</td><td>31.59%</td><td>1.13%</td><td>1.13%</td><td></td><td>33.82%</td></tr>
<tr><td>Private Vehicle - Parking</td><td>10.44%</td><td>8.50%</td><td>3.92%</td><td>3.82%</td><td>0.76%</td><td></td><td>8.50%</td></tr>
<tr><td>Charter Van</td><td>6.03%</td><td>6.03%</td><td rowspan="4">16.84%[1]</td><td rowspan="4">8.42%[1]</td><td rowspan="4">3.28%[1]</td><td></td><td>6.23%</td></tr>
<tr><td>Taxi</td><td>9.42%</td><td>9.42%</td><td></td><td>9.42%</td></tr>
<tr><td>Paid Ride (TNC)</td><td>6.69%</td><td>10.00%</td><td></td><td>10.43%</td></tr>
<tr><td>Limo/Town Car</td><td>3.10%</td><td>3.10%</td><td></td><td>3.10%</td></tr>
<tr><td>Shared Ride Van</td><td>4.50%</td><td>3.69%</td><td></td><td></td><td>3.69%</td><td></td><td>3.79%</td></tr>
<tr><td>Rental Car Shuttle</td><td>18.90%</td><td>18.90%</td><td></td><td></td><td></td><td>18.90%</td><td>18.90%</td></tr>
<tr><td>Hotel Shuttle</td><td>2.06%</td><td>2.06%</td><td></td><td>2.06%</td><td></td><td></td><td></td></tr>
<tr><td>FlyAway</td><td>2.45%</td><td>2.45%</td><td></td><td></td><td>2.45%</td><td></td><td>2.06%</td></tr>
<tr><td>Charter Bus</td><td>0.70%</td><td>0.70%</td><td></td><td></td><td>0.70%</td><td></td><td>2.53%</td></tr>
<tr><td>Transit</td><td>0.50%</td><td>1.31%</td><td></td><td></td><td>1.31%</td><td></td><td>0.70%</td></tr>
<tr><td>Total CTA</td><td rowspan="2">100.00%</td><td rowspan="2">100.00%</td><td>52.35%</td><td></td><td></td><td></td><td>0.50%</td></tr>
<tr><td>Total Non-CTA (APM)</td><td></td><td>15.43%</td><td>13.31%</td><td>18.90%</td><td></td></tr>
</table>

NOTE:

1/ Taxi and TNC services are substantially similar and were treated as such for this part of the analysis.

SOURCE: Ricondo & Associates, Inc. in consultation with MapLAX team and LAWA staff, May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.9 Future (2035) Traffic Conditions

4.12.1.9.1 Determination of 2035 Analysis Peak Hours

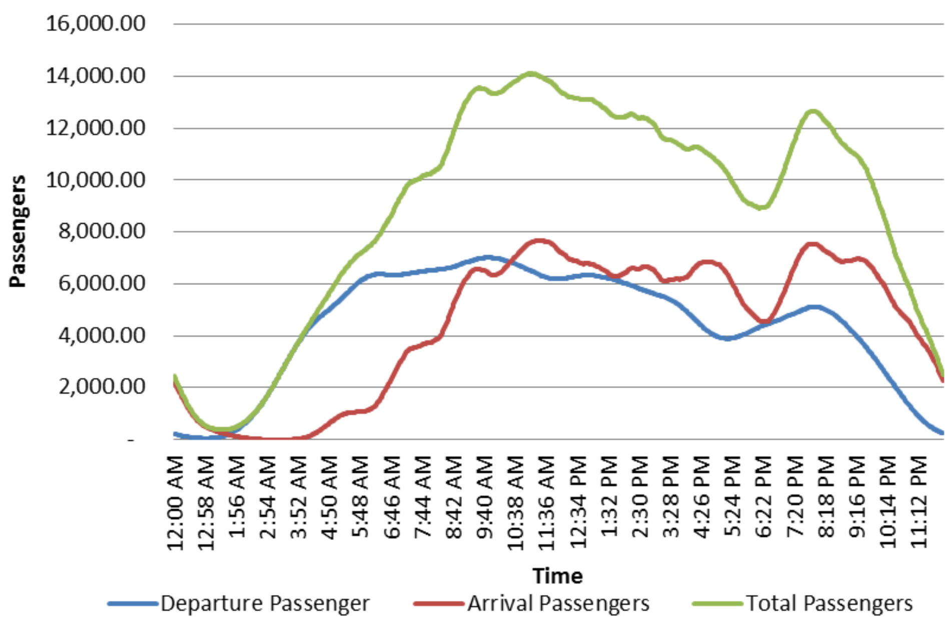
To determine the peak hours for the 2035 Without Project and the 2035 With Project conditions, the 2035 design day passenger schedule for LAX was developed. The FAA's Terminal Area Forecast[13] for LAX in 2035 was converted to PMAD levels to forecast activity at the Airport for a typical Friday in August. To develop the 2035 Without Project and With Project traffic volumes used to evaluate the CTA's future landside operations, a

13 Federal Aviation Administration, *APO Terminal Area Forecast*, January 2015.

flight schedule representative of passenger activity level of 95 MAP was used.[14] The passenger schedule for 2035 Without Project and With Project conditions was the same, as the proposed Project would not affect the number or type of aircraft operations or passenger activity levels at LAX.

Figure 4.12.1-9 depicts the rolling hourly terminating and originating passenger flows at the CTA curbsides for 2035 conditions. The passenger flows show that 2035 conditions would produce two pronounced peaks in passenger activity on the arrivals level curbsides with the peak hour occurring from 11:30 a.m. to 12:30 p.m. resulting in a total of 7,659 passengers on the curbside. Similarly, departing passenger flows show the 2035 conditions would result in the peak hour occurring between 9:51 a.m. to 10:51 a.m. with a total of 7,006 passengers on the curbside.

Figure 4.12.1-9: Future (2035) Rolling Hour Departure and Arrival Passengers Volumes



SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

14 Ricondo & Associates, Inc., *LAX 2024 and 2035 Passenger Flight Schedules*, August 2016.

As part of this process, adjustments were made to the 2014 passenger mode splits to reflect the two ITFs and CONRAC, and how changes to the regional transportation network would affect passenger mode choice and resultant vehicle activity at the Airport. **Table 4.12.1-10** and **Table 4.12.1-11** present the passenger mode splits used to estimate the CTA traffic volumes in the 2035 conditions on the departures level and arrivals level, respectively. The passenger mode splits represent the proportion of total airline passengers using each vehicle mode during the peak hours analyzed. The tables also present the modes picking-up or dropping-off passengers at either of the ITFs or CONRAC. These passengers would use the APM to access the CTA.

Table 4.12.1-10: Future (2035) Mode Share – Departing Passengers

<table>
<tr><th rowspan="3">MODE</th><th>EXISTING (2015)</th><th colspan="5">FUTURE (2035) W/ PROJECT</th><th>FUTURE (2035) W/O PROJECT</th></tr>
<tr><th></th><th>TOTALS</th><th>CTA</th><th>ITF WEST (APM)</th><th>ITF EAST (APM)</th><th>CONRAC (APM)</th><th></th></tr>
<tr><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th></tr>
<tr><td>Private Vehicle - Pick-Up/Drop-Off</td><td>36.20%</td><td>34.30%</td><td>32.00%</td><td>1.10%</td><td>1.10%</td><td></td><td>34.30%</td></tr>
<tr><td>Private Vehicle - Parking</td><td>11.70%</td><td>7.90%</td><td>3.60%</td><td>3.50%</td><td>0.70%</td><td></td><td>7.90%</td></tr>
<tr><td>Charter Van</td><td>6.80%</td><td>6.80%</td><td rowspan="4">16.30%</td><td rowspan="4">8.10%</td><td rowspan="4">3.20%</td><td></td><td>7.20%</td></tr>
<tr><td>Taxi</td><td>5.80%</td><td>5.80%</td><td></td><td>5.80%</td></tr>
<tr><td>Paid Ride (TNC)</td><td>6.90%</td><td>12.70%</td><td></td><td>13.50%</td></tr>
<tr><td>Limo/Town Car</td><td>3.00%</td><td>2.30%</td><td></td><td>2.30%</td></tr>
<tr><td>Shared Ride Van</td><td>3.60%</td><td>2.80%</td><td></td><td></td><td>2.80%</td><td></td><td>3.00%</td></tr>
<tr><td>Rental Car Shuttle</td><td>21.00%</td><td>21.00%</td><td></td><td></td><td></td><td>21.00%</td><td>21.00%</td></tr>
<tr><td>Hotel Shuttle</td><td>2.10%</td><td>2.10%</td><td></td><td>2.10%</td><td></td><td></td><td>2.10%</td></tr>
<tr><td>FlyAway</td><td>1.50%</td><td>1.50%</td><td>1.50%</td><td></td><td></td><td></td><td>1.60%</td></tr>
<tr><td>Charter Bus</td><td>0.80%</td><td>0.80%</td><td></td><td></td><td>0.80%</td><td></td><td>0.80%</td></tr>
<tr><td>Transit</td><td>0.50%</td><td>2.00%</td><td></td><td></td><td>2.00%</td><td></td><td>0.50%</td></tr>
<tr><td>Total CTA</td><td rowspan="2">100.00%</td><td>100.00%</td><td>53.40%</td><td></td><td></td><td></td><td>100.00%</td></tr>
<tr><td>Total Non-CTA (APM)</td><td></td><td></td><td>14.90%</td><td>10.60%</td><td>21.00%</td><td></td></tr>
</table>

SOURCE: Ricondo & Associates, Inc. in consultation with MapLAX team and LAWA staff, May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

[Draft]

Table 4.12.1-11: Future (2035) Mode Share – Arriving Passengers

<table>
<tr><th rowspan="3">MODE</th><th>EXISTING (2015)</th><th colspan="5">FUTURE (2035) W/ PROJECT</th><th>FUTURE (2030) W/O PROJECT</th></tr>
<tr><th></th><th>TOTALS</th><th>CTA</th><th>ITF WEST (APM)</th><th>ITF EAST (APM)</th><th>CONRAC (APM)</th><th></th></tr>
<tr><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th><th>MODE SHARE</th></tr>
<tr><td>Private Vehicle - Pick-Up/Drop-Off</td><td>35.21%</td><td>32.69%</td><td>30.51%</td><td>1.09%</td><td>1.09%</td><td></td><td>34.30%</td></tr>
<tr><td>Private Vehicle - Parking</td><td>10.44%</td><td>6.85%</td><td>3.16%</td><td>3.08%</td><td>0.61%</td><td></td><td>7.90%</td></tr>
<tr><td>Charter Van</td><td>6.03%</td><td>6.03%</td><td rowspan="4">18.50%</td><td rowspan="4">9.25%</td><td rowspan="4">3.61%</td><td rowspan="4"></td><td>7.20%</td></tr>
<tr><td>Taxi</td><td>9.42%</td><td>9.42%</td><td>5.80%</td></tr>
<tr><td>Paid Ride (TNC)</td><td>6.69%</td><td>12.80%</td><td>13.50%</td></tr>
<tr><td>Limo/Town Car</td><td>3.10%</td><td>3.10%</td><td>2.30%</td></tr>
<tr><td>Shared Ride Van</td><td>4.50%</td><td>3.00%</td><td></td><td></td><td>3.00%</td><td></td><td>3.00%</td></tr>
<tr><td>Rental Car Shuttle</td><td>18.90%</td><td>18.90%</td><td></td><td></td><td></td><td>18.90%</td><td>21.00%</td></tr>
<tr><td>Hotel Shuttle</td><td>2.06%</td><td>2.06%</td><td></td><td>2.06%</td><td></td><td></td><td>2.10%</td></tr>
<tr><td>FlyAway</td><td>2.45%</td><td>2.45%</td><td></td><td></td><td>2.45%</td><td></td><td>1.60%</td></tr>
<tr><td>Charter Bus</td><td>0.70%</td><td>0.70%</td><td></td><td></td><td>0.70%</td><td></td><td>0.80%</td></tr>
<tr><td>Transit</td><td>0.50%</td><td>2.00%</td><td></td><td></td><td>2.00%</td><td></td><td>0.50%</td></tr>
<tr><td>Total CTA</td><td rowspan="2">100.00%</td><td></td><td>52.17%</td><td></td><td></td><td></td><td>100.00%</td></tr>
<tr><td>Total Non-CTA (APM)</td><td></td><td></td><td>15.48%</td><td>13.45%</td><td>18.90%</td><td></td></tr>
</table>

SOURCE: Ricondo & Associates, Inc. in consultation with MapLAX team and LAWA staff, May 2016.
PREPARED BY: Ricondo & Associates, Inc., May 2016.

The 2024 and 2035 mode split estimates were calculated based on the general mode split trends derived between the LAX 2006 Passenger Survey[15], the LAX 2011 Passenger Survey[16] and the LAX 2015 Passenger Survey[17], together with inputs from LAWA, including defining the modes predicted to be relocated to each of the ITFs. The LAX 2011 Passenger Survey showed a decreasing trend among passengers using private

15 Applied Management and Planning Group, *2006 Air Passenger Survey Final Report Los Angeles International Airport*, conducted between July 31 and August 27, 2006 (peak) as well as October 03 and October 22, 2006 (non-peak), December, 2007.

16 Unison Consulting, Inc., *Los Angeles International Airport 2011 Passenger Survey*, conducted between August 22 and August 28, 2011 (peak) as well as October 17 and October 24, 2011 (non-peak), August 2012.

17 Unison Consulting, Inc., *Final Report, Los Angeles International Airport 2015 Air Passenger Survey Results and Findings*, February 2016.

vehicles, limousines, shared ride vans, and taxis. The LAX 2015 Passenger Survey further accelerated this decreasing trend with more passengers choosing TNCs over private vehicles, limousines, taxis, and shared ride vans. Other modes were also marginally affected by the mode shift to the TNCs. To effect these mode shifts, as described in Chapter 2, *Description of the Proposed Project*, LAWA would update the LAX Ground Transportation Permit Program to allow and/or require commercial operators to pick-up and drop-off passengers at the ITF East and ITF West. Concurrently, LAWA would restrict access to the CTA for some commercial operators. LAWA would also institute pricing differential strategies to encourage commercial vehicle operators to pick-up and drop-off passengers at the ITF East and the ITF West.

Additionally, as described in Chapter 2, *Description of the Proposed Project*, LAWA would use differential pricing strategies to encourage passengers to pick-up and drop-off passengers or to park their vehicles at the ITF East and the ITF West. These strategies could include lower parking rates compared to the parking garages located within the CTA, free parking for a limited amount of time for people waiting to pick-up passengers, cell-phone waiting areas, and/or instituting tolls during peak periods for vehicles entering the CTA. With implementation of the proposed Project, changes to the LAX Ground Transportation Permit Program, and implementation of pricing differential strategies, LAWA would manage the Project facilities to induce future daily passenger mode share shifts, with most commercial vehicle operators picking-up and dropping-off passengers at the ITF East and ITF West.

4.12.1.9.2 Determination of Future (2035) Traffic Volumes

The calibrated trip generation and trip distribution models for the 2014 departures and arrivals peak hours were used as a basis for estimating the peak hour CTA vehicle volumes for each of the future (2035) conditions.

4.12.1.10 Evaluation of Traffic Conditions for Future Conditions and Impact Analysis

The trip generation and distribution models described previously in Section 4.12.1.2 were used to estimate the Phase 1 (2024) Without Project and With Project traffic volumes required to evaluate the on-Airport intersection operations. Phase 2 (2035) Without Project and With Project traffic volumes were similarly estimated. This section describes how the traffic volumes derived from the vehicle trip generation and distribution models were used to assess traffic conditions at each of the CTA key intersections. Traffic analyses representing the existing (2014) conditions are described in Section 4.12.1.3.

4.12.1.10.1 Phase 1 (2024) CTA Intersection Analysis

As discussed in Section 4.12.1.2, key CTA intersections were analyzed using the TRB Circular 212 CMA methodology. The analysis evaluated the projected operating conditions using the CTA roadway traffic volumes for Phase 1, Future (2024) Without Project and With Project conditions, as provided in **Table 4.12.1-12** for the Airport peak departures and arrivals hours. The vehicle turning movement volumes were projected using the vehicle trip generation and distribution models for each condition.

[Draft]

Table 4.12.1-12: Peak Hour CTA Signalized Intersection Turning Movement Volumes and Level of Service Analysis - Future (2024) Conditions

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
INTERSECTION	PEAK HOUR1/	L	T	R	L	T	R	L	T	R	L	T	R	V/C2/	LOS3/
		2024 WITHOUT PROJECT													
World Way North and Sky Way (Upper Level)	Departure						1,302					2,644		0.645	B
World Way South and West Way (Upper Level)	Departure				1,116				2,006					0.738	C
World Way South and East Way (Upper Level)	Departure				487			74	3,047					0.638	B
World Way North and Sky Way (Lower Level)	Arrival	386	267				1345					1,880		0.741	C
World Way South and Center Way (Exit) (Lower Level)4/	Arrival	264	1,202	984					1001	852				0.910	E
East Way and World Way South (Lower Level)	Arrival				361			150	1,866					0.484	A
		2024 WITH PROJECT													
World Way South and West Way (Upper Level)	Departure				1,184				1,310					0.664	B
World Way South and East Way (Upper Level)	Departure				429			74	2,420					0.524	A
World Way South and Center Way (Exit) (Lower Level)4	Arrival	164	886	725					996	840				0.82	D
East Way and World Way South (Lower Level)	Arrival				318			107	1,312					0.366	A

NOTES:

1/ The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:15 a.m. to 12:15 p.m.

2/ Volume to capacity ratio.

3/ Level of Service range: A (excellent) to F (failure).

4/ For the World Way South and Center Way intersection, World Way South volumes are noted in the Northbound column and Center Way volumes are noted in the Eastbound column of the table.

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

As was the case with the existing (2014) conditions intersection analysis, the levels of service definitions for the CMA methodology presented in Table 4.12.1-4 were used; the results are provided in Table 4.12.1-12 below. In the future (2024) Without Project conditions, the intersection of World Way South and Center Way (Exit) is projected to operate at LOS E, and the intersections of World Way South and West Way and World Way North and Sky Way (Lower Level) are projected to operate at LOS C. In the future (2024) With Project conditions, the intersection of World Way South and Center Way (Exit) is projected to operate at LOS D. All other intersections for both the future (2024) Without Project and With Project conditions would operate at LOS B or better. As a result, under the With Project traffic conditions, the overall traffic volume in the CTA would decrease compared to the Without Project conditions, leading to a lower V/C ratio and therefore a better LOS.

4.12.1.10.2 Phase 2 (2035) CTA Intersection Analysis

Under Phase 2, the Future (2035) Without Project and With Project conditions are provided in **Table 4.12.1-13** for the Airport peak departures and arrivals hours. In the future (2035) Without Project conditions, the intersection of World Way South and Center Way (Exit) is projected to operate at LOS E, the intersection of World Way South and West Way is projected to operate at LOS D, and the intersections of World Way North and Sky Way (both Upper Level and Lower Level) and World Way South and East Way are projected to operate at LOS C. In the future (2024) With Project conditions, the intersections of World Way South and West Way and Center Way to SB Sepulveda Ramp and Return Road are projected to operate at LOS C. All other intersections for both the Without Project and With Project conditions would operate at LOS B or better.

As shown in Tables 4.12.1-12 and 4.12.1-13, the V/C ratios decrease under With Project conditions as compared to Without Project condition. With the construction of the off-Airport facilities as a result of the proposed Project, passengers would access/egress the CTA using the APM to be picked-up or dropped-off at the ITFs. Under the With Project conditions, all the commercial vehicles with the exception of taxis, limos, and TNC would be picking-up and dropping-off at the ITFs. Further, a small number (5 percent) of private vehicles and taxicabs would likely use the kiss and ride facilities at the ITFs. As a result, under the With Project traffic conditions, the overall traffic volume in the CTA would decrease compared to the Without Project conditions, leading to a lower V/C ratio and therefore a better LOS.

The intersection analysis utilized the Circular 212 (C212) method, which analyzed intersections based on the critical movements that conflict with one another to determine the maximum amount of traffic throughput that can be attained in a given traffic signal cycle. The on-Airport environment is unique and has a different set of constraints than typical street intersections, such as downstream stoppages of traffic as a result of curbside operations, higher proportion of traffic that is unfamiliar with the roadways leading to slower speeds, constant need of decision-making as a result of signage, and a complex mix of vehicle modes. The C212 method is a static intersection analysis method, which calculates the Level of Service (LOS) based on the intersection being isolated from other traffic conditions.

[Draft]

Table 4.12.1-13: Peak Hour CTA Signalized Intersection Turning Movement Volumes and Level of Service Analysis - Future (2035) Conditions

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
INTERSECTION	**PEAK HOUR**[1/]	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**V/C**[2/]	**LOS**[3/]
		2035 WITHOUT PROJECT													
World Way North and Sky Way (Upper Level)	Departure						1502					3,065		0.746	C
World Way South and West Way (Upper Level)	Departure				1,309				2,310					0.86	D
World Way South and East Way (Upper Level)	Departure				577			81	3,538					0.745	C
World Way North and Sky Way (Lower Level)	Arrival	400	270				1,430					2,048		0.79	C
World Way South and Center Way (Exit) (Lower Level)[4/]	Arrival	366	1,318	1,078					925	788				0.92	E
East Way and World Way South (Lower Level)	Arrival				544			127	1,540					0.498	A
		2035 WITH PROJECT													
World Way South and West Way (Upper Level)	Departure				1,365				1,506					0.765	C
World Way South and East Way (Upper Level)	Departure				496			81	2,790					0.604	B
Center way to SB Sepulveda Ramp and Return Road	Arrival		250						774					0.745	C
East Way and World Way South (Lower Level)	Arrival				477			85	1,028					0.378	A

NOTES:

1/ The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:30 a.m. to 12:30 p.m.

2/ Volume to capacity ratio.

3/ Level of Service range: A (excellent) to F (failure).

4/ For the World Way South and Center Way intersection, World Way South volumes are noted in the Northbound column and Center Way volumes are noted in the Eastbound column of the table.

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

[Draft]

4.12.1.10.3 Phase 1 (2024) CTA Roadway Analysis

As discussed in Section 4.12.1.2, key CTA roadway links were analyzed by comparing the roadway capacities to the roadway link demand based on the curbside demand at that link. The analysis evaluated the projected operating conditions using the CTA roadway traffic volumes for Phase 1, Future (2024) Without Project and With Project conditions, as provided in **Table 4.12.1-14** for the Airport peak departures and arrivals hours.

Table 4.12.1-14: Peak Hour CTA Roadway Volumes and Level of Service Analysis - Future (2024) Conditions

	2024 WITHOUT PROJECT			2024 WITH PROJECT		
ROADWAY LINK	VOLUMES	ROADWAY V/C	LOS	VOLUMES	ROADWAY V/C	LOS
DEPARTURES						
Upper Level Roadway Link Adjacent to Terminal 1	3,946	1.56	F	3,261	0.82	D
Upper Level Roadway Link Adjacent to Terminal 2	3,400	1.41	F	2,772	0.90	D
Upper Level Roadway Link Adjacent to Terminal 3	2,184	1.17	F	1,488	0.50	A
Upper Level Roadway Link Adjacent to TBIT	2,080	1.27	F	1,384	0.50	A
Upper Level Roadway Link Adjacent to Terminal 4	2,006	1.32	F	1,310	0.50	A
Upper Level Roadway Link Adjacent to Terminal 5	3,122	1.79	F	2,494	0.87	D
Upper Level Roadway Link Adjacent to Terminal 6	3,122	1.58	F	2,494	0.87	D
Upper Level Roadway Link Adjacent to Terminal 7	3,534	1.61	F	2,849	0.96	E
ARRIVALS						
Roadway Link Adjacent to Terminal 1 Lower Level Inner Curbside	1,076	2.95	F	867	0.91	E
Roadway Link Adjacent to Terminal 2 Lower Level Inner Curbside	456	0.30	A	326	0.18	A
Roadway Link Adjacent to Terminal 3 Lower Level Inner Curbside	203	0.05	A	121	0.01	A
Roadway Link Adjacent to TBIT Lower Level Inner Curbside	762	0.39	A	567	0.24	A
Roadway Link Adjacent to Terminal 4 Lower Level Inner Curbside	478	0.22	A	358	0.16	A
Roadway Link Adjacent to Terminal 5 Lower Level Inner Curbside	242	0.05	A	149	0.01	A
Roadway Link Adjacent to Terminal 6 Lower Level Inner Curbside	346	0.17	A	226	0.10	A
Roadway Link Adjacent to Terminal 7 Lower Level Inner Curbside	374	0.12	A	248	0.07	A
Roadway Link Adjacent to Terminal 1 Lower Level Outer Curbside	2,551	1.84	F	2,006	0.57	A
Roadway Link Adjacent to Terminal 2 Lower Level Outer Curbside	2,827	1.99	F	2,204	0.89	D
Roadway Link Adjacent to Terminal 3 Lower Level Outer Curbside	2,456	1.86	F	1,890	0.55	A
Roadway Link Adjacent to TBIT Lower Level Outer Curbside	1,874	1.10	F	1,355	0.76	C
Roadway Link Adjacent to Terminal 4 Lower Level Outer Curbside	1,654	0.89	D	1,146	0.53	A
Roadway Link Adjacent to Terminal 5 Lower Level Outer Curbside	2,054	2.03	F	1,500	1.51	F
Roadway Link Adjacent to Terminal 6 Lower Level Outer Curbside	2,120	1.12	F	1,540	0.66	B
Roadway Link Adjacent to Terminal 7 Lower Level Outer Curbside	2,178	1.09	F	1,628	0.67	B

NOTE: The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:15 a.m. to 12:15 p.m.

SOURCE: Ricondo & Associates, Inc. May 2016.

PREPARED BY: Ricondo & Associates, Inc. May 2016.

4.12.1.10.4 Phase 2 (2035) CTA Roadway Analysis

The roadway link analysis evaluated the projected operating conditions using the CTA roadway traffic volumes for Phase 2, Future (2035) Without Project and With Project conditions, as provided in **Table 4.12.1-15** for the Airport peak departures and arrivals hours.

4.12.1.10.5 Roadway Link Analysis Results

As presented in Tables 4.12.1-14 and 4.12.1-15, the roadway LOS under the Without Project conditions in both the 2024 and 2035 future years would be severely congested, with 16 of the 24 CTA roadway links operating at LOS F. However, for every analyzed key link, the proposed Project would improve the V/C ratio compared to future Without Project conditions, and in no case would the proposed Project cause LOS to degrade. Therefore, the proposed Project would not contribute to any significant cumulative impacts on roadway links.

Construction of the proposed off-Airport facilities would result in passengers accessing/egressing the CTA using the APM to be picked-up or dropped-off at the ITFs. Under the future 2024 and 2035 With Project conditions, all commercial vehicles with the exception of taxis, limos, and TNC would be picking-up and dropping-off at the ITFs. Further, a small number (5 percent) of private vehicles and taxicabs would likely use the "kiss and ride" facilities at the ITFs. As a result, under both the future 2024 and 2035 With Project conditions, the overall traffic volume in the CTA would decrease compared to the future 2024 and 2035 Without Project conditions, leading to a lower V/C ratio and therefore a better LOS. As shown in Tables 4.12.1-14 and 4.12.1-15, the lower level outer roadways show a substantial improvement under both the future 2024 and 2035 With Project conditions compared to the future 2024 and 2035 Without Project conditions because of the elimination of the commercial vehicles accessing the CTA leading to no curbside utilizations on the outer curbsides. As explained previously, the roadway LOS is a factor of the curbside utilization and with no curbside parking, the roadway capacity would substantially improve. Certain links on the lower level would still operate at an LOS F on the lower level outer roadways under the future 2024 and 2035 With Project conditions. However, under the future 2024 and 2035 With Project conditions, a substantial reduction in V/C ratio would be achieved, which would improve traffic flows compared to the future 2024 and 2035 Without Project conditions.

4.12.1.10.6 Additional Impact Analyses

Impact Comparison 1: Existing (2014) With Project Traffic Compared to Existing (2014) with Without Project Traffic

This comparison provides the basis for determining Project-related impacts using an existing conditions baseline. The comparison is based on Project-specific traffic redistribution during Airport arrivals and departures peak hours added to existing traffic volumes (during peak hours). The resulting levels of service were compared to the levels of service associated with the existing (2014) condition. A significant impact would be realized if the thresholds of significance described in Section 4.12.1.5 are met or exceeded as a result of the proposed Project. **Table 4.12.1-16** compares the proposed Project's traffic and LOS to existing (2014) traffic and LOS. As shown, under Comparison 1, no significant impacts to key CTA intersections would occur.

[Draft]

Table 4.12.1-15: Peak Hour CTA Roadway Volumes and Level of Service Analysis - Future (2035) Conditions

	2035 WITHOUT PROJECT			2035 WITH PROJECT		
ROADWAY LINK	VOLUMES	ROADWAY V/C	LOS	VOLUMES	ROADWAY V/C	LOS
DEPARTURES						
Upper Level Roadway Link Adjacent to Terminal 1	4,567	1.91	F	4,567	0.97	E
Upper Level Roadway Link Adjacent to Terminal 2	3,924	1.62	F	3,924	1.03	F
Upper Level Roadway Link Adjacent to Terminal 3	2,505	1.35	F	2,505	0.59	A
Upper Level Roadway Link Adjacent to TBIT	2,391	1.57	F	2,391	0.58	A
Upper Level Roadway Link Adjacent to Terminal 4	2,310	1.63	F	2,310	0.60	A
Upper Level Roadway Link Adjacent to Terminal 5	3,619	2.07	F	3,619	1.04	F
Upper Level Roadway Link Adjacent to Terminal 6	3,619	1.95	F	3,619	1.00	F
Upper Level Roadway Link Adjacent to Terminal 7	4,115	1.87	F	4,115	1.15	F
ARRIVALS						
Roadway Link Adjacent to Terminal 1 Lower Level Inner Curbside	1,123	3.06	F	900	2.29	F
Roadway Link Adjacent to Terminal 2 Lower Level Inner Curbside	474	0.29	A	338	0.15	A
Roadway Link Adjacent to Terminal 3 Lower Level Inner Curbside	195	0.05	A	110	0.02	A
Roadway Link Adjacent to TBIT Lower Level Inner Curbside	492	0.21	A	335	0.15	A
Roadway Link Adjacent to Terminal 4 Lower Level Inner Curbside	336	0.15	A	226	0.09	A
Roadway Link Adjacent to Terminal 5 Lower Level Inner Curbside	527	0.35	A	376	0.20	A
Roadway Link Adjacent to Terminal 6 Lower Level Inner Curbside	787	0.45	A	594	0.27	A
Roadway Link Adjacent to Terminal 7 Lower Level Inner Curbside	658	0.21	A	495	0.10	A
Roadway Link Adjacent to Terminal 1 Lower Level Outer Curbside	2,782	1.93	F	2,190	0.70	B
Roadway Link Adjacent to Terminal 2 Lower Level Outer Curbside	2,895	2.08	F	2,243	1.17	F
Roadway Link Adjacent to Terminal 3 Lower Level Outer Curbside	2,260	1.63	F	1,725	0.56	A
Roadway Link Adjacent to TBIT Lower Level Outer Curbside	1,783	1.05	F	1,281	0.72	C
Roadway Link Adjacent to Terminal 4 Lower Level Outer Curbside	1,594	0.74	C	1,100	0.36	A
Roadway Link Adjacent to Terminal 5 Lower Level Outer Curbside	2,310	2.56	F	1,715	1.93	F
Roadway Link Adjacent to Terminal 6 Lower Level Outer Curbside	1,927	1.17	F	1,373	0.75	C
Roadway Link Adjacent to Terminal 7 Lower Level Outer Curbside	2,122	1.14	F	1,555	0.75	C

NOTE: The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:30 a.m. to 12:30 p.m.

SOURCE: Ricondo & Associates, Inc. May 2016.

PREPARED BY: Ricondo & Associates, Inc. May 2016.

Table 4.12.1-16: Impact Comparison 1: Project Traffic Measured against Existing (2014) with Without Project Traffic

INTERSECTION	EXISTING (2014)		EXISTING (2014) WITH PROJECT		CHANGE	SIGNIFICANT IMPACT?
	V/C[2/]	LOS[3/]	V/C[2/]	LOS[3/]		
World Way North and Sky Way (Upper Level)	0.428	A	N/A[1]	N/A[1]		
World Way South and West Way (Upper Level)	0.394	A	0.488	A	0.094	No
World Way South and East Way (Upper Level)	0.448	A	0.381	A	-0.067	No
World Way North and Sky Way (Lower Level)	0.561	A	N/A[1/]	N/A[1/]		
World Way South and Center Way (Exit) (Lower Level)	0.68	B	N/A[1/]	N/A[1/]		
East Way and World Way South (Lower Level)	0.439	A	0.434	A	-0.005	No
Center Way to SB Sepulveda Ramp and Return Road[4/]			0.769	C		

NOTES:

1/ These intersections do not exist in the With Project conditions.

2/ Volume to capacity ratio.

3/ Level of Service range: A (excellent) to F (failure).

4/ New Intersection

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

Impact Comparison 2: Cumulative Traffic (Future [2024] and Future [2035]) Compared to Existing (2014)

This analysis was conducted in two steps, consistent with CEQA Guidelines Section 15130, in order to determine whether cumulative impacts are significant, and whether the proposed Project's contributions are cumulatively considerable. The LOS associated with peak cumulative traffic volumes (Future [2024] and Future [2035] With Project) were first compared to Existing (2014) 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 cumulative conditions with and without the proposed Project were compared to determine whether the proposed Project's incremental contribution was cumulatively considerable. Significant cumulative impacts and cumulatively considerable contributions would occur when the thresholds of significance defined in Section 4.12.1.5 are exceeded.

Table 4.12.1-17 shows the cumulative impact comparison for Future (2024) conditions. As shown in the table, the intersection of World Way South and Center Way (Exit) (Lower Level) shows a significant cumulative impact compared to existing conditions; however, the proposed Project's contribution would not be cumulatively considerable. There would not be a significant cumulative impact at all other intersections.

Table 4.12.1-18 shows the cumulative impact comparison for Future (2035) conditions. As shown in the table, the intersection of World Way South and West Way (Upper Level) shows a significant cumulative impact compared to existing conditions; however, the proposed Project's contribution would not be cumulatively considerable. There would not be a significant cumulative impact at all other intersections.

[Draft]

Table 4.12.1-17: Impact Comparison 2: Cumulative Traffic Future [2024] Measured Against Existing (2014) Traffic

		EXISTING 2014		WITHOUT PROJECT		PROJECT		CUMULATIVE IMPACT DETERMINATION		CUMULATIVELY CONSIDERABLE DETERMINATION	
INTERSECTION	**PEAK HOUR[4/]**	**V/C[1/]**	**LOS[2/]**	**V/C[1/]**	**LOS[2/]**	**V/C[1/]**	**LOS[2/]**	**CHANGE**	**SIGNIFICANT CUMULATIVE IMPACT?**	**CHANGE IN V/C**	**CUMULATIVELY CONSIDERABLE CONTRIBUTION?**
		[A]		[B]		[C]		[C]-[A]		[C]-[B]	
World Way North and Sky Way (Upper Level)	Departure	0.428	A	0.645	B	N/A[3/]	N/A[3/]				
World Way South and West Way (Upper Level)	Departure	0.394	A	0.738	C	0.664	B	0.270	No	-0.074	NA
World Way South and East Way (Upper Level)	Departure	0.448	A	0.638	B	0.524	A	0.076	No	-0.114	NA
World Way North and Sky Way (Lower Level)	Arrival	0.561	A	0.741	C	N/A[3/]	N/A[3/]				
World Way South and Center Way (Exit) (Lower Level)	Arrival	0.68	B	0.9	E	0.82	D	0.140	Yes	-0.08	No
East Way and World Way South (Lower Level)	Arrival	0.439	A	0.484	A	0.366	A	-0.073	No	-0.118	NA

NOTES:

1/ Volume to capacity ratio.

2/ Level of Service range: A (excellent) to F (failure).

3/ These intersections do not exist in the With Project conditions.

4/ The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:15 a.m. to 12:15 p.m.

SOURCE: Ricondo & Associates, Inc. May 2016.
PREPARED BY: Ricondo & Associates, Inc. May 2016.

[Draft]

Table 4.12.1-18: Impact Comparison 2: Cumulative Traffic Future [2035] Measured Against Existing (2014) Traffic

				CUMULATIVE PEAK (2035)							
		EXISTING 2014		WITHOUT PROJECT		PROJECT		CUMULATIVE IMPACT DETERMINATION		CUMULATIVELY CONSIDERABLE DETERMINATION	
INTERSECTION	PEAK HOUR[5/]	V/C[1/]	LOS[2/]	V/C[1/]	LOS[2/]	V/C[1/]	LOS[2/]	CHANGE	SIGNIFICANT CUMULATIVE IMPACT?	CHANGE IN V/C	CUMULATIVELY CONSIDERABLE CONTRIBUTION?
		[A]		[B]		[C]		[C]-[A]		[C]-[B]	
World Way North and Sky Way (Upper Level)	Departure	0.428	A	0.746	C	N/A[3/]	N/A[3/]				
World Way South and West Way (Upper Level)	Departure	0.394	A	0.86	D	0.765	C	0.371	Yes	-0.091	No
World Way South and East Way (Upper Level)	Departure	0.448	A	0.745	C	0.604	B	0.156	No	-0.121	NA
World Way North and Sky Way (Lower Level)	Arrival	0.561	A	0.79	C	N/A[3/]	N/A[3/]				
World Way South and Center Way (Exit) (Lower Level)	Arrival	0.68	B	0.92	E	N/A[3/]	N/A[3/]				
East Way and World Way South (Lower Level)	Arrival	0.439	A	0.498	A	0.378	A	-0.061	No	-0.126	NA
Center Way to SB Sepulveda Ramp and Return Road[4/]	Arrival					0.745	C				

NOTES:

1/ Volume to capacity ratio.

2/ Level of Service range: A (excellent) to F (failure).

3/ These intersections do not exist in the With Project conditions.

4/ New Intersection in With Project conditions

5/ The departures peak hour occurred from 9:51 a.m. to 10:51 a.m. The arrivals peak hour occurred from 11:30 a.m. to 12:30 p.m.

SOURCE: Ricondo & Associates, Inc. May 2016

PREPARED BY: Ricondo & Associates, Inc. May 2016

4.12.1.11 Conclusions

The results from the above analyses show that implementation of the proposed Project would not cause significant on-Airport traffic-related impacts to the intersections during either the arrivals or departures level peak hours. The proposed Project would reduce the volume of traffic in the CTA by eliminating the commercial vehicles, which would pick-up and drop-off passengers at the proposed off-Airport facilities. The elimination of the commercial vehicles in the CTA would also substantially reduce the weaving at the slip ramps connecting the lower level inner and outer curbsides, thereby resulting in a smoother traffic flow. This is because, with the absence of commercial vehicles parking on the lower outer curbsides, the exiting vehicles from the inner curbside and the entering vehicles to the inner curbside would have an extra lane to merge or diverge.

An additional roadway link analysis was performed to evaluate impacts to the roadway segments within the CTA. The on-Airport environment is unique and has a different set of constraints, such as downstream stoppages of traffic as a result of curbside operations, a higher proportion of traffic that is unfamiliar with the roadways leading to slower speeds, the constant need of decision-making as a result of signage, and a complex mix of vehicle modes, which affects traffic flow in the CTA. The results of the roadway link analysis demonstrated that the overall traffic volume in the CTA would decrease compared to the Without Project conditions, in many instances resulting in an improved LOS compared to the Without Project condition. Even in cases where LOS was not improved, there was a reduction in the V/C ratio leading to an improved experience for Airport users. The lower level outer roadways show a substantial improvement under the With Project conditions compared to the Without Project conditions because of the elimination of the commercial vehicles accessing the CTA leading to no curbside utilizations on the outer curbsides.

4.12.1.12 Mitigation Measures

As indicated in Sections 4.12.1.10 and 4.12.1.11, impacts to the on-Airport intersections and roadway links with 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.

4.12.1.13 Level of Significance after Mitigation

Impacts to the on-Airport intersections and roadway links from implementation of the proposed Project would be less than significant.

4.12.2 OFF-AIRPORT TRANSPORTATION

4.12.2.1 Introduction

The off-Airport transportation analysis for the proposed Project addresses operational traffic-related impacts outside the Airport boundaries, including arterial roads, highway segments, and ramps that serve traffic approaching and departing the Airport environs. This analysis also considers remote facilities that serve Airport-related functions, such as parking and off-Airport cargo. The impacts of passengers, employees, cargo, and potential future related development on off-Airport roads are also included. Impacts to on-Airport transportation associated with operation of the proposed Project are addressed in Section 4.12.1, *On-Airport Transportation*; impacts regarding traffic during construction are addressed in Section 4.12.3, *Construction Surface Transportation*. The proposed Project's consistency with the City of Los Angeles Mobility Plan 2035 is analyzed in Section 4.8, *Land Use and Planning*.

The Project represents a major change in the ground access system used by passengers and employees to access the Los Angeles International Airport (LAX). The Project consists of both physical improvements and transportation operating system policy changes affecting how people choose to access LAX. The primary focus of the analysis presented in this section is on changes in traffic conditions that would result from the ground access system improvements proposed under the proposed Project. The off-Airport transportation analysis completed for the proposed Project accounts for increases in Airport-related traffic that would occur in conjunction with increases in Airport passenger activity projected to occur by 2024 and 2035. Such future growth in passenger activity levels at LAX is independent of the proposed Project and would occur even if no improvements were implemented; however, under the proposed Project, both existing and future passengers and employees would have more modal choices in how they access LAX resulting in a more balanced multi-modal ground access system. The following scenarios were analyzed in the proposed Project off-Airport transportation impact analysis:

- Baseline (2015) (i.e., existing traffic conditions without the proposed Project)
- 2015 With Project (i.e., existing traffic conditions as affected by the proposed Project)
- 2024 Future Without Project (i.e., future conditions with projected growth in background vehicle trips in the area surrounding LAX and roadway improvements and in Airport-related vehicle trips projected to occur by 2024, but without the proposed Project components)
- 2024 Future With Project (i.e., the future conditions described above for the 2024 Future Without Project scenario plus the ground access improvements associated with the proposed Project components)
- 2035 Future Without Project (i.e., future conditions with projected growth in background vehicle trips in the area surrounding LAX and roadway improvements and in Airport-related vehicle trips projected to occur by 2035, but without the proposed Project components)
- 2035 Future With Project (i.e., the future conditions described above for the 2035 Future Without Project scenario plus the ground access improvements associated with the Proposed Project components)
- 2035 Future With Project and Potential Future Related Development (i.e., the future conditions described above for the 2035 Future With Project scenario plus potential future related development)

4.12.2.2 Methodology

The methodology and base assumptions used in this analysis were established in conjunction with the California Department of Transportation (Caltrans) and City of Los Angeles Department of Transportation (LADOT). The methodology and assumptions were shared with the City of Culver City, City of Inglewood, and the City of El Segundo. See **Appendix O** for details.

4.12.2.2.1 Off-Airport Traffic Analysis Study Area

The off-Airport traffic analysis study area (Study Area) was delineated through coordination with the local jurisdictions, including the City of Los Angeles, City of Culver City, City of Inglewood, City of El Segundo, City of Hawthorne, City of Manhattan Beach, County of Los Angeles and Caltrans. The Study Area encompasses approximately 75 square miles; it is generally bounded on the north by Venice Boulevard; on the south by Rosecrans Avenue; on the west by Vista del Mar; and on the east by Western Avenue. Regional access to the Project site is provided by the San Diego (I-405) Freeway, the Glenn Anderson (I-105) Freeway and the Marina (SR-90) Freeway.

The Study Area was delineated to ensure all intersections that could experience significant impacts were analyzed.

Locations Analyzed

Through coordination with eight local jurisdictions, a total of 183 intersections were selected for analysis. A list of these intersections by jurisdiction is presented in **Table 4.12.2-1** and their locations are illustrated in **Figure 4.12.2-1**. All 183 intersections have been analyzed for the morning (a.m.) and evening (p.m.) peak hours; 36 of these intersections (immediately adjacent to or in the vicinity of the Project site) have been selected for a midday off-peak hour traffic impact evaluation. These intersections have been noted with an asterisk in Table 4.12.2-1.

A summary of the 183 intersection study locations is provided below:

- 36 intersections are located entirely in the City of Los Angeles with 51 intersections shared between the City of Los Angeles and other jurisdictions
- 30 intersections are located entirely in Culver City with 10 intersections shared between Culver City and other jurisdictions
- 21 intersections are located entirely in the City of Inglewood with 15 intersections shared between City of Inglewood and other jurisdictions
- 3 intersections are located entirely in the City of El Segundo with 12 intersections shared between City of El Segundo and other jurisdictions
- 8 intersections are located entirely in the City of Hawthorne with 10 intersections shared between City of Hawthorne and other jurisdictions
- 1 intersection is located entirely in the City of Manhattan Beach with 2 intersections shared between City of Manhattan Beach and other jurisdictions
- 9 intersections are located entirely in (unincorporated) County of Los Angeles with 21 intersections shared between County of Los Angeles and other jurisdictions

[Draft]

Table 4.12.2-1 (1 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
1	Ocean Avenue/Via Marina and Washington Boulevard	City of Los Angeles/Los Angeles County
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	City of Los Angeles
3	Vista del Mar and Imperial Highway	City of Los Angeles
4	Vista del Mar and Grand Avenue	City of Los Angeles/El Segundo
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	Manhattan Beach
6	Nicholson Street and Culver Boulevard	City of Los Angeles
7	Pershing Drive and Manchester Avenue	City of Los Angeles
8	Pershing Drive and Westchester Parkway	City of Los Angeles
9	Pershing Drive and Imperial Highway	City of Los Angeles
10	Culver Boulevard and Jefferson Boulevard	City of Los Angeles
11	Main Street and Imperial Highway	El Segundo/City of Los Angeles
12	Lincoln Boulevard and Venice Boulevard [1/]	City of Los Angeles/Caltrans
13	Lincoln Boulevard and Washington Boulevard	City of Los Angeles/Caltrans
14	Lincoln Boulevard and SR-90 Ramps [1/]	City of Los Angeles/Caltrans
15	Lincoln Boulevard and Bali Way	City of Los Angeles/Los Angeles County/Caltrans
16	Lincoln Boulevard and Mindanao Way	City of Los Angeles/Los Angeles County/Caltrans
17	Lincoln Boulevard and Fiji Way	City of Los Angeles/Los Angeles County/Caltrans
18	Lincoln Boulevard and Jefferson Boulevard	City of Los Angeles/Caltrans
19	Lincoln Boulevard and Bluff Creek Drive	City of Los Angeles/Caltrans
20	Lincoln Boulevard and Loyola Marymount University Drive	City of Los Angeles/Caltrans
21	Lincoln Boulevard and 83rd Street	City of Los Angeles/Caltrans
22*	Lincoln Boulevard and Manchester Avenue [1/]	City of Los Angeles/Caltrans
23*	Lincoln Boulevard and La Tijera Boulevard	City of Los Angeles/Caltrans
24	Centinela Avenue and Venice Boulevard [1/]	City of Los Angeles/Caltrans
25	Centinela Avenue and Washington Place	Culver City/City of Los Angeles
26	Centinela Avenue and Washington Boulevard	Culver City
27	Centinela Avenue and Culver Boulevard	City of Los Angeles
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	City of Los Angeles/Caltrans
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	City of Los Angeles/Caltrans
30	Centinela Avenue and Jefferson Boulevard	City of Los Angeles/Los Angeles County
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	City of Los Angeles
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	Culver City/Caltrans

[Draft]

Table 4.12.2-1 (2 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
33	Sawtelle Boulevard and Washington Place	Culver City
34	Sawtelle Boulevard and Washington Boulevard	Culver City
35	Sawtelle Boulevard and Culver Boulevard	Culver City
36	I-405 Southbound Ramps and Jefferson Boulevard	City of Los Angeles/Culver City/Caltrans
37	I-405 Northbound Ramps and Jefferson Boulevard	City of Los Angeles/Culver City/Caltrans
38	Slauson Avenue and Jefferson Boulevard	Culver City
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	Culver City/Caltrans
40	Sepulveda Boulevard and Washington Place	Culver City
41	Sepulveda Boulevard and Washington Boulevard	Culver City
42	Sepulveda Boulevard and Culver Boulevard	Culver City
43	Sepulveda Boulevard and Braddock Drive	Culver City
44	Overland Avenue and Venice Boulevard [1/]	City of Los Angeles/Culver City/Caltrans
45	Overland Avenue and Washington Boulevard	City of Los Angeles/Culver City
46	Overland Avenue and Culver Boulevard	Culver City
47	Duquesne Avenue and Washington Boulevard	Culver City
48	Duquesne Avenue and Culver Boulevard	Culver City
49	Culver Boulevard and Washington Boulevard-Irving Place	Culver City
50	Duquesne Avenue and Jefferson Boulevard	Culver City
51	Overland Avenue and Jefferson Boulevard	Culver City
52	Sepulveda Boulevard and Jefferson Boulevard	Culver City
53	Sepulveda Boulevard and Sawtelle Boulevard	Culver City
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	Culver City
55	Sepulveda Boulevard and Slauson Avenue	Culver City
56	Sepulveda Boulevard and Centinela Avenue	Culver City
57	Sepulveda Boulevard and Howard Hughes Parkway	City of Los Angeles
58	Sepulveda Boulevard and 76th Street-77th Street	City of Los Angeles
59	Sepulveda Boulevard and 79th Street-80th Street	City of Los Angeles
60	Sepulveda Boulevard and 83rd Street	City of Los Angeles
61*	Sepulveda Boulevard and Manchester Avenue [1/]	City of Los Angeles
62*	Sepulveda Boulevard and La Tijera Boulevard	City of Los Angeles
63*	Sepulveda Boulevard and Westchester Parkway	City of Los Angeles
64*	Sepulveda Boulevard and Lincoln Boulevard [1/]	City of Los Angeles/Caltrans

Table 4.12.2-1 (3 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
65*	Sepulveda Boulevard and Century Boulevard	City of Los Angeles/Caltrans
66*	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	City of Los Angeles/Caltrans
67*	Sepulveda Boulevard and Imperial Highway	El Segundo/City of Los Angeles/Caltrans
68	Sepulveda Boulevard and Mariposa Avenue	El Segundo/Caltrans
69	Sepulveda Boulevard and Grand Avenue	El Segundo/Caltrans
70	Sepulveda Boulevard and El Segundo Boulevard [1/]	El Segundo/Caltrans
71	Sepulveda Boulevard and Rosecrans Avenue [1/]	El Segundo/Manhattan Beach/Caltrans
72	SR-90 Westbound Ramps and Slauson Avenue	Culver City/Los Angeles County/Caltrans
73	Buckingham Parkway and Slauson Avenue	Culver City
74	I-405 Southbound Ramps and Howard Hughes Parkway	City of Los Angeles/Caltrans
75	Sepulveda Eastway and Westchester Parkway	City of Los Angeles
76*	La Tijera Boulevard and Manchester Avenue	City of Los Angeles
77*	Jenny Avenue and Westchester Parkway	City of Los Angeles
78*	Avion Drive and Century Boulevard	City of Los Angeles
79*	La Tijera Boulevard and Airport Boulevard	City of Los Angeles
80*	Airport Boulevard and Manchester Avenue	City of Los Angeles
81*	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	City of Los Angeles
82*	Airport Boulevard and 96th Street	City of Los Angeles
83*	Airport Boulevard and 98th Street	City of Los Angeles
84*	Airport Boulevard and Century Boulevard	City of Los Angeles
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	El Segundo/City of Los Angeles/Caltrans
86	Nash Street and El Segundo Boulevard	El Segundo
87	Douglas Street and Imperial Highway	El Segundo/City of Los Angeles
88	Douglas Street and El Segundo Boulevard	El Segundo
89*	I-405 Northbound Ramps and La Tijera Boulevard	City of Los Angeles/Caltrans
90*	I-405 Southbound Ramps and La Tijera Boulevard	City of Los Angeles/Caltrans
91	Bellanca Avenue and Century Boulevard	City of Los Angeles
92*	Aviation Boulevard/Florence Avenue and Manchester Avenue	Inglewood
93*	Aviation Boulevard and Arbor Vitae Street	City of Los Angeles/Inglewood
94*	Aviation Boulevard and Century Boulevard	City of Los Angeles
95*	Aviation Boulevard and 104th Street	City of Los Angeles

Table 4.12.2-1 (4 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
96*	Aviation Boulevard and 111th Street	City of Los Angeles
97*	Aviation Boulevard and Imperial Highway	City of Los Angeles/El Segundo
98	Aviation Boulevard and West 120th Street	El Segundo/Los Angeles County
99	Aviation Boulevard and El Segundo Boulevard	El Segundo
100	Aviation Boulevard and Rosecrans Avenue	Hawthorne/El Segundo/Manhattan Beach
101	Hindry Avenue and Manchester Boulevard	Inglewood
102*	Hindry Avenue and Arbor Vitae Street [2/]	City of Los Angeles/Inglewood
103	Concourse Way and Century Boulevard	City of Los Angeles
104*	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	City of Los Angeles/Caltrans
105	La Tijera Boulevard and Centinela Avenue	City of Los Angeles/Los Angeles County
106	Jefferson Boulevard and National Boulevard	City of Los Angeles
107	Jefferson Boulevard and Higuera Street/Rodeo Road	City of Los Angeles
108	La Cienega Boulevard and Jefferson Boulevard [1/]	City of Los Angeles
109	La Cienega Boulevard and Rodeo Road	City of Los Angeles
110	La Cienega Boulevard and Stocker Street [1/]	Los Angeles County
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	Los Angeles County
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	Los Angeles County
113	La Cienega Boulevard and La Tijera Boulevard	City of Los Angeles/Inglewood
114	La Cienega Boulevard and Centinela Avenue [1/]	City of Los Angeles/Inglewood
115*	La Cienega Boulevard and Florence Avenue	Inglewood
116*	La Cienega Boulevard and Manchester Boulevard	Inglewood
117*	La Cienega Boulevard and Arbor Vitae Street	Inglewood
118*	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Boulevard)	City of Los Angeles/Inglewood/Caltrans
119*	La Cienega Boulevard and Century Boulevard	City of Los Angeles/Los Angeles County/Inglewood
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Boulevard)	City of Los Angeles/Inglewood/Caltrans
121	La Cienega Boulevard and 104th Street	City of Los Angeles/Los Angeles County
122	La Cienega Boulevard and Lennox Boulevard	City of Los Angeles/Los Angeles County
123	La Cienega Boulevard and 111th Street	City of Los Angeles/Los Angeles County
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Highway)	City of Los Angeles/Los Angeles County/Caltrans

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Table 4.12.2-1 (5 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
125*	La Cienega Boulevard and Imperial Highway	City of Los Angeles/Los Angeles County
126	La Cienega Boulevard and West 120th Street	Los Angeles County
127	La Cienega Boulevard and El Segundo Boulevard	Hawthorne/Los Angeles County
128	Hindry Avenue and Rosecrans Avenue	Hawthorne
129*	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	Inglewood/Caltrans
130*	I-405 Northbound Ramps and Century Boulevard	Inglewood/Caltrans
131	I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway	Hawthorne/Los Angeles County/Caltrans
132	I-405 Northbound Ramps and El Segundo Boulevard	Hawthorne/Los Angeles County/Caltrans
133	I-405 Northbound Ramps and Rosecrans Avenue	Hawthorne/Caltrans
134	Inglewood Avenue and Manchester Boulevard	Inglewood
135	Inglewood Avenue and Arbor Vitae Street	Inglewood
136	Inglewood Avenue and Century Boulevard	Inglewood
137	Inglewood Avenue and Lennox Boulevard	Los Angeles County
138	Inglewood Avenue and Imperial Highway	Hawthorne
139	Inglewood Avenue and El Segundo Boulevard	Hawthorne/Los Angeles County
140	Inglewood Avenue and Rosecrans Avenue	Hawthorne
141	La Brea Avenue/Overhill Drive and Stocker Street	Los Angeles County
142	La Brea Avenue and Slauson Avenue	Los Angeles County
143	La Brea Avenue and Centinela Avenue	Inglewood
144	La Brea Avenue and Florence Avenue	Inglewood
145	La Brea Avenue and Manchester Boulevard [1/]	Inglewood
146	La Brea Avenue and Arbor Vitae Street	Inglewood
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	Inglewood
148	Hawthorne Boulevard and Lennox Boulevard	Los Angeles County
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	Hawthorne/Los Angeles County/Caltrans
150	Hawthorne Boulevard and Imperial Avenue	Hawthorne
151	Hawthorne Boulevard and 120th Street	Hawthorne
152	Hawthorne Boulevard and El Segundo Boulevard	Hawthorne
153	Hawthorne Boulevard and Rosecrans Avenue	Hawthorne
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	Hawthorne/Caltrans
155	Prairie Avenue and Manchester Boulevard	Inglewood

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Table 4.12.2-1 (6 of 6): List of Intersections Analyzed

MAP NO.	INTERSECTION	JURISDICTION
156	Prairie Avenue and Arbor Vitae Street	Inglewood
157	Prairie Avenue and Century Boulevard	Inglewood
158	Prairie Avenue and Lennox Boulevard	Inglewood
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	Inglewood/Caltrans
160	Prairie Avenue and Imperial Highway	Hawthorne/Inglewood
161	Prairie Avenue and El Segundo Boulevard	Hawthorne
162	Crenshaw Boulevard and Manchester Avenue 1/	Inglewood
163	Crenshaw Boulevard and Century Boulevard	Inglewood
164	Crenshaw Boulevard and Imperial Highway	Inglewood
165	Western Avenue and Manchester Avenue	City of Los Angeles
166	Western Avenue and Imperial Highway	Los Angeles County
167	I-405 Northbound Ramps and Culver Boulevard	Culver City/Caltrans
168	Walgrove Avenue and Washington Boulevard 2/	Culver City
169	Washington Boulevard and Washington Place at Wade Street	Culver City
170	Inglewood Boulevard and Washington Boulevard	Culver City
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Boulevard)	Culver City/Caltrans
172	Washington Boulevard and Washington Place at Tilden Avenue	Culver City
173	Overland Avenue and Sawtelle Boulevard 2/	Culver City
174	Canfield Avenue-Washington Boulevard (Ince Blvd) and Culver Boulevard	Culver City
175	Ince Boulevard and Washington Boulevard	Culver City
176	National Boulevard and Venice Boulevard	City of Los Angeles/Caltrans
177	National Boulevard and Washington Boulevard	Culver City
178	La Cienega Boulevard and Washington Boulevard	Culver City
179	Centinela Avenue and Florence Avenue	Inglewood
180	Prairie Avenue and Florence Avenue	Inglewood
181	Van Ness Avenue and Manchester Avenue	City of Los Angeles/Inglewood
182	Van Ness Avenue and Century Boulevard	City of Los Angeles/County of Los Angeles/Inglewood
183	Van Ness Avenue and Imperial Highway	Inglewood/Hawthorne/County of Los Angeles

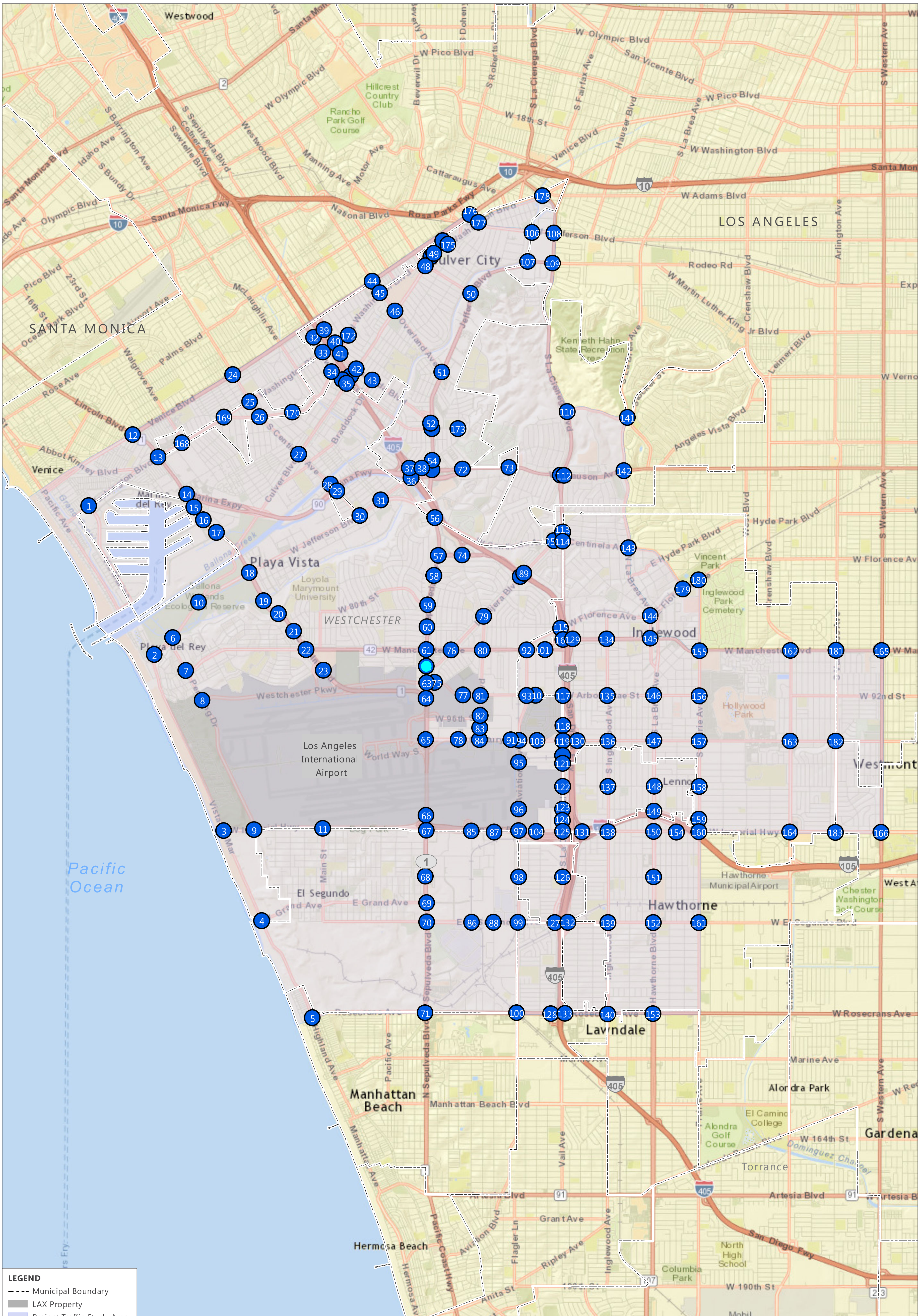
NOTES:

* = Midday off-peak intersection

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, airport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 5,600 ft.

FIGURE 4.12.2-1

Traffic Study Intersections

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Of the 183 intersections analyzed, 180 intersections are controlled by traffic signals. The remaining three intersections are unsignalized and controlled by a stop sign(s):

- Intersection of Hindry Avenue and Arbor Vitae Street, located mostly within the City of Inglewood, with the southerly segment in the City of Los Angeles
- Intersection of Walgrove Avenue and Washington Boulevard, in the City of Culver City
- Intersection of Overland Avenue and Sawtelle Boulevard, in the City of Culver City

A total of 48 study intersections are State Highway arterial and freeway ramp intersection locations that also fall under Caltrans jurisdiction. Of these 48 intersections, 21 intersections are located along a designated State Highway and 27 intersections are freeway ramp locations.

Non-Motorized Transportation

Non-motorized transportation includes primarily biking and walking, and typically serves shorter trips than motorized travel. Bikeways facilitate and encourage this mode of non-motorized transportation in the study area. Class I bikeways are defined as separate off-street paths; Class II bikeways are defined as striped lanes within streets; and Class III bikeways are defined as signed bicycle routes. Pedestrian access at and near public transit in the Project area is facilitated by sidewalks, which are present on most streets. Impacts to non-motorized transportation are discussed in Section 4.12.2.7.

4.12.2.2.2 Intersection Level of Service

Level of service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to overloaded conditions at LOS F. LOS D is typically recognized as the minimum acceptable level of service in urban areas. LOS definitions for signalized and un-signalized intersections are provided in **Table 4.12.2-2** and **Table 4.12.2-3**.

For the City of Los Angeles study locations, including those shared with other jurisdictions, the *Critical Movement Analysis-Planning*[1] (CMA) method of intersection capacity analysis was used to determine the intersection volume to capacity (V/C) ratio and corresponding level of service at the signalized study intersections. Level of service spreadsheets developed by LADOT were used to implement the CMA Circular 212 Method methodology. Table 4.12.2-2 defines the ranges of V/C ratios and corresponding levels of service for signalized intersections.

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1 Transportation Research Board, *Transportation Research Circular No. 212, Interim Materials on Highway Capacity*, January 1980.

Table 4.12.2-2: Level of Service Definitions for Signalized Intersections

LEVEL OF SERVICE	VOLUME/CAPACITY RATIO	DEFINITION
A	0.000 – 0.600	EXCELLENT. No vehicle waits longer than one red light and no approach phase is fully used.
B	>0.600 - 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	>0.700 - 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	>0.800 - 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	>0.900 - 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations 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 and Associates, Inc., July 2016.

Table 4.12.2-3: Level of Service Definitions for Stop-Controlled Intersections

LEVEL OF SERVICE	AVERAGE TOTAL DELAY (SECONDS/VEHICLE)
A	< 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

SOURCE: Transportation Research Board, *Highway Capacity Manual,* 2010.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

All 86 of the signalized study intersections located in the City of Los Angeles (or shared with other jurisdictions) are currently controlled by the City of Los Angeles' Automated Traffic Surveillance and Control (ATSAC) System and Adaptive Traffic Control System (ATCS). In accordance with LADOT procedures, a capacity increase of 10 percent (0.07 V/C adjustment for ATSAC and 0.03 V/C adjustment for ATCS) was applied to reflect the benefits of ATSAC/ATCS control at these intersections. Thirty-eight signalized intersections under the jurisdiction of the City of Culver City currently operate under a signal coordination system similar to ATSAC, but have not yet been upgraded with the ATCS-type operations. Therefore, a capacity increase of 7 percent (0.07 V/C adjustments) was applied to reflect the benefits of ATSAC-type control at these intersections.

The Intersection Capacity Utilization (ICU) method was used to determine the intersection V/C ratio and corresponding level of service for study intersections within the Cities of Culver City, Inglewood, El Segundo, Hawthorne, Manhattan Beach, and the County of Los Angeles per their study requirements. A capacity of 1,600 vehicles per lane per hour was assumed, a total of 2,880 vehicles per hour for dual left-turn lanes, and a 10 percent calculation factor for the loss time of the yellow signal clearance periods were utilized in the capacity calculations.

The Highway Capacity Manual (HCM) 2010 method of unsignalized intersection analysis was used to determine the delay (in seconds) and corresponding level of service at the stop-controlled intersections. Table 4.12.2-3 defines the ranges of delay and corresponding levels of service for unsignalized intersections.

4.12.2.2.3 Description of Traffic Model

Utilizing TransCAD Version 7.0 modeling software, a detailed and updated travel demand forecasting model (updated City of Los Angeles Travel Demand Model) was developed for the Study Area using the Southern California Association of Governments' (SCAG) Regional Transportation Plan (RTP) 2012 Transportation Model (the most current regional model available at the time this Draft EIR was being prepared) and the calibrated and validated City of Los Angeles' Travel Demand Model as the base. The Model produces a.m. and p.m. peak period results; midday off-peak period results; vehicular and transit flows on the transportation network within the Study Area based on comprehensive land use and socio-economic input data (SED); and a detailed representation of the transportation network. The model uses a conventional 4-step process consisting of trip generation, trip distribution, modal split, and assignment. See Appendix O for details.

Utilizing the calibrated model, the future years 2024 and 2035 conditions (including the base highway network and land use/socioeconomic data changes) were forecast in a manner consistent with the regional SCAG 2012 Transportation Model.

4.12.2.2.4 Delineation of Existing (2015) Traffic Conditions

Traffic Count Data

Existing traffic volumes were compiled using video footage during morning and evening peak hours collected between 2013 and 2015. Data for 133 of 183 intersections was collected in 2015; data for 44 intersections was collected in 2014. Traffic counts at the remaining six intersections were obtained from 2013.[2] Consistent with the City of Los Angeles Traffic Impact Guidelines, traffic counts at intersections within the City of Los Angeles jurisdiction were generally obtained from 7:00-10:00 a.m. and from 3:00-6:00 p.m. The counts at the

2 Traffic data collected in years 2013 and 2014 were adjusted upwards by 1.5 percent per year to represent existing 2015 conditions. These traffic volumes reflect typical weekday operations during current year 2015 conditions.

remaining intersections under other jurisdictions were obtained from 7:00-9:00 a.m. and 4:00-6:00 p.m. In addition to morning and evening peak hour traffic counts, traffic counts were also conducted at 36 intersections for the midday peak hour. Of these 36 locations, traffic counts at 34 of these intersections were collected in 2014;[3] data for the remaining two locations was obtained in 2015. The counts were generally obtained between 11:00 a.m. and 2:00 p.m.

Field surveys were conducted in 2015 at all the study intersections to obtain intersection lane geometry and signal phasing data. For Caltrans study intersections, signal timing data was also collected during the peak periods for use in the HCM 2010 analyses.

Existing Trip Generation

LAWA publishes an annual traffic generation report for LAX, including all trips associated with LAX and its facilities. The 2014 report, *Traffic Generation Report – Los Angeles International Airport*,[4] summarizes August 2014 traffic generation for LAX. These trips include hotel and rental car shuttles, on-Airport parking, off-Airport parking, employee parking, cargo facilities and rental car facilities. All traffic entering and exiting the CTA was recorded and counted using LAWA's Traffic and Automated Vehicle Identification System (TRAVIS) and loop counts. Traffic counts at other driveways to various Airport-related facilities that make up the overall trip generation are collected annually on Fridays in August. Utilizing the August 2014 data, a trip generation model was developed as part of the On-Airport Traffic analysis and calibrated for non-summer commuter peak weekday for LAX facilities including the CTA, on-Airport parking, off-Airport parking and rental car facilities. This model is more fully described in Section 4.12.1.2.4. The trip generation of the remaining LAX facilities such as the cargo area and the West Aircraft Maintenance Area was compiled from the driveway counts collected as part of the annual surveys.

The resulting existing 2015 trip generation estimates are summarized in **Table 4.12.2-4**. As indicated in the table, under the existing 2015 peak weekday conditions, LAX and associated facilities generate a total of approximately 12,300 trips in the morning peak hour, 16,000 trips in the midday peak hour, and 12,800 trips in the evening peak hour.

Existing Operating Conditions

A summary of the number of intersections operating at each LOS is shown in **Table 4.12.2-5**. Existing intersection operations during the weekday morning, midday, and evening peak hours are shown in **Table 4.12.2-6**. Table 4.12.2-6 summarizes the V/C ratios and corresponding LOS at each of the analyzed locations.

The existing traffic volumes presented in Table 4.12.2-4 for a.m. and p.m. peak hours were used in conjunction with the level of service methodologies described earlier, and the current intersection characteristics illustrated in Appendix O, to determine the existing operating conditions at the analyzed intersections.

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3 Traffic data collected in 2014 were adjusted upwards by 1.5 percent per year to represent existing 2015 conditions.

4 Los Angeles World Airports, *Traffic Generation Report, Los Angeles International Airport, August 2014*, December 2014.

Table 4.12.2-4: Summary of Existing (2015) Trip Generation

	2015 BASELINE		
	IN	OUT	TOTAL
AM PEAK HOUR			
Central Terminal Area (CTA)	4,039	3,776	7,815
Airport Parking	148	19	167
Off-Airport Parking	233	55	288
Rental Car Facilities	766	513	1,279
Employee Parking	759	280	1,039
Cargo Facilities	978	772	1,750
TOTAL	**6,923**	**5,415**	**12,338**
MD PEAK HOUR			
Central Terminal Area (CTA)	5,219	5,377	10,596
Airport Parking	114	51	165
Off-Airport Parking	191	97	288
Rental Car Facilities	1,232	863	2,095
Employee Parking	639	549	1,188
Cargo Facilities	949	816	1,765
TOTAL	**8,344**	**7,753**	**16,097**
PM PEAK HOUR			
Central Terminal Area (CTA)	3,956	4,428	8,384
Airport Parking	102	38	140
Off-Airport Parking	116	106	222
Rental Car Facilities	541	573	1,114
Employee Parking	338	586	924
Cargo Facilities	940	1,116	2,056
TOTAL	**5,993**	**6,847**	**12,840**

SOURCE: Ricondo and Associates, Inc., July 2016.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

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Table 4.12.2-5: Summary of Intersection Level of Service Analysis – 2015 Existing Conditions

LEVEL OF SERVICE	AM PEAK HOUR	MD PEAK HOUR	PM PEAK HOUR
A	45	27	40
B	38	5	37
C	41	3	40
D	36	0	38
E	15	1	20
F	8	0	8
Total	183	36 [1/]	183

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-6 (1 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

MAP NO.	INTERSECTION	A.M. PEAK HOUR V/C	A.M. PEAK HOUR LOS	M.D. PEAK HOUR V/C	M.D. PEAK HOUR LOS	P.M. PEAK HOUR V/C	P.M. PEAK HOUR LOS
1	Ocean Avenue/Via Marina and Washington Boulevard	0.574	A	---	---	0.675	B
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	0.782	C	---	---	0.653	B
3	Vista del Mar and Imperial Highway	0.496	A	---	---	0.493	A
4	Vista del Mar and Grand Avenue	0.638	B	---	---	0.478	A
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	0.906	E	---	---	0.774	C
6	Nicholson Street and Culver Boulevard	0.652	B	---	---	0.798	C
7	Pershing Drive and Manchester Avenue	0.409	A	---	---	0.427	A
8	Pershing Drive and Westchester Parkway	0.429	A	---	---	0.259	A
9	Pershing Drive and Imperial Highway	0.520	A	---	---	0.400	A
10	Culver Boulevard and Jefferson Boulevard	0.727	C	---	---	0.810	D
11	Main Street and Imperial Highway	0.693	B	---	---	0.608	B
12	Lincoln Boulevard and Venice Boulevard [1/]	0.871	D	---	---	0.840	D
13	Lincoln Boulevard and Washington Boulevard	0.837	D	---	---	0.783	C
14	Lincoln Boulevard and SR-90 Ramps [1/]	0.665	B	---	---	0.608	B
15	Lincoln Boulevard and Bali Way	0.509	A	---	---	0.552	A
16	Lincoln Boulevard and Mindanao Way	0.710	C	---	---	0.781	C
17	Lincoln Boulevard and Fiji Way	0.628	B	---	---	0.720	C
18	Lincoln Boulevard and Jefferson Boulevard	0.840	D	---	---	0.639	B
19	Lincoln Boulevard and Bluff Creek Drive	0.544	A	---	---	0.360	A
20	Lincoln Boulevard and Loyola Marymount University Drive	0.689	B	---	---	0.579	A

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Table 4.12.2-6 (2 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

MAP NO.	INTERSECTION	A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
		V/C	LOS	V/C	LOS	V/C	LOS
21	Lincoln Boulevard and 83rd Street	1.027	F	---	---	0.613	B
22	Lincoln Boulevard and Manchester Avenue 1/	0.856	D	0.545	A	0.669	B
23	Lincoln Boulevard and La Tijera Boulevard	0.405	A	0.278	A	0.421	A
24	Centinela Avenue and Venice Boulevard 1/	0.928	E	---	---	0.804	D
25	Centinela Avenue and Washington Place	0.794	C	---	---	0.875	D
26	Centinela Avenue and Washington Boulevard	0.804	D	---	---	0.900	D
27	Centinela Avenue and Culver Boulevard	0.884	D	---	---	0.991	E
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	0.467	A	---	---	0.447	A
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	0.494	A	---	---	0.424	A
30	Centinela Avenue and Jefferson Boulevard	0.737	C	---	---	0.685	B
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	0.700	B	---	---	0.632	B
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	0.768	C	---	---	0.827	D
33	Sawtelle Boulevard and Washington Place	0.573	A	---	---	0.620	B
34	Sawtelle Boulevard and Washington Boulevard	0.647	B	---	---	0.680	B
35	Sawtelle Boulevard and Culver Boulevard	0.747	C	---	---	0.862	D
36	I-405 Southbound Ramps and Jefferson Boulevard	0.590	A	---	---	0.528	A
37	I-405 Northbound Ramps and Jefferson Boulevard	0.913	E	---	---	0.770	C
38	Slauson Avenue and Jefferson Boulevard	0.438	A	---	---	0.445	A
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	0.693	B	---	---	0.899	D
40	Sepulveda Boulevard and Washington Place	0.839	D	---	---	0.823	D
41	Sepulveda Boulevard and Washington Boulevard	0.759	C	---	---	0.786	C

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Table 4.12.2-6 (3 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS
42	Sepulveda Boulevard and Culver Boulevard	0.908	E	---	---	0.867	D
43	Sepulveda Boulevard and Braddock Drive	0.691	B	---	---	0.675	B
44	Overland Avenue and Venice Boulevard [1/]	0.841	D	---	---	0.819	D
45	Overland Avenue and Washington Boulevard	0.796	C	---	---	0.953	E
46	Overland Avenue and Culver Boulevard	0.983	E	---	---	0.913	E
47	Duquesne Avenue and Washington Boulevard	0.568	A	---	---	0.691	B
48	Duquesne Avenue and Culver Boulevard	0.636	B	---	---	0.657	B
49	Culver Boulevard and Washington Boulevard-Irving Place	0.650	B	---	---	0.641	B
50	Duquesne Avenue and Jefferson Boulevard	0.806	D	---	---	0.770	C
51	Overland Avenue and Jefferson Boulevard	0.824	D	---	---	0.830	D
52	Sepulveda Boulevard and Jefferson Boulevard	0.604	B	---	---	0.605	B
53	Sepulveda Boulevard and Sawtelle Boulevard	0.685	B	---	---	0.717	C
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	0.899	D	---	---	0.685	B
55	Sepulveda Boulevard and Slauson Avenue	0.726	C	---	---	0.610	B
56	Sepulveda Boulevard and Centinela Avenue	0.767	C	---	---	0.981	E
57	Sepulveda Boulevard and Howard Hughes Parkway	0.767	C	---	---	0.633	B
58	Sepulveda Boulevard and 76th Street-77th Street	0.913	E	---	---	0.567	A
59	Sepulveda Boulevard and 79th Street-80th Street	0.687	B	---	---	0.443	A
60	Sepulveda Boulevard and 83rd Street	0.537	A	---	---	0.401	A
61	Sepulveda Boulevard and Manchester Avenue [1]	0.715	C	0.597	A	0.808	D
62	Sepulveda Boulevard and La Tijera Boulevard	0.656	B	0.639	B	0.712	C

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Table 4.12.2-6 (4 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS
63	Sepulveda Boulevard and Westchester Parkway	0.735	C	0.748	C	0.784	C
64	Sepulveda Boulevard and Lincoln Boulevard [1/]	0.601	B	0.478	A	0.620	B
65	Sepulveda Boulevard and Century Boulevard	0.754	C	0.594	A	0.689	B
66	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	1.078	F	0.921	E	0.901	E
67	Sepulveda Boulevard and Imperial Highway	0.774	C	0.684	B	1.089	F
68	Sepulveda Boulevard and Mariposa Avenue	0.748	C	---	---	0.782	C
69	Sepulveda Boulevard and Grand Avenue	0.820	D	---	---	0.875	D
70	Sepulveda Boulevard and El Segundo Boulevard [1/]	0.815	D	---	---	0.967	E
71	Sepulveda Boulevard and Rosecrans Avenue [1/]	0.937	E	---	---	1.001	F
72	SR-90 Westbound Ramps and Slauson Avenue	0.736	C	---	---	0.734	C
73	Buckingham Parkway and Slauson Avenue	0.806	D	---	---	0.726	C
74	I-405 Southbound Ramps and Howard Hughes Parkway	0.428	A	---	---	0.214	A
75	Sepulveda Eastway and Westchester Parkway	0.407	A	---	---	0.602	B
76	La Tijera Boulevard and Manchester Avenue	0.508	A	0.524	A	0.504	A
77	Jenny Avenue and Westchester Parkway	0.197	A	0.232	A	0.330	A
78	Avion Drive and Century Boulevard	0.381	A	0.320	A	0.292	A
79	La Tijera Boulevard and Airport Boulevard	0.442	A	0.349	A	0.475	A
80	Airport Boulevard and Manchester Avenue	0.573	A	0.633	B	0.699	B
81	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	0.661	B	0.587	A	0.763	C
82	Airport Boulevard and 96th Street	0.279	A	0.332	A	0.376	A
83	Airport Boulevard and 98th Street	0.374	A	0.397	A	0.467	A

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Table 4.12.2-6 (5 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

MAP NO.	INTERSECTION	A.M. PEAK HOUR V/C	A.M. PEAK HOUR LOS	M.D. PEAK HOUR V/C	M.D. PEAK HOUR LOS	P.M. PEAK HOUR V/C	P.M. PEAK HOUR LOS
84	Airport Boulevard and Century Boulevard	0.565	A	0.451	A	0.459	A
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	0.414	A	---	---	0.350	A
86	Nash Street and El Segundo Boulevard	0.551	A	---	---	0.579	A
87	Douglas Street and Imperial Highway	0.346	A	---	---	0.579	A
88	Douglas Street and El Segundo Boulevard	0.736	C	---	---	0.854	D
89	I-405 Northbound Ramps and La Tijera Boulevard	0.804	D	0.706	C	0.773	C
90	I-405 Southbound Ramps and La Tijera Boulevard	0.740	C	0.588	A	0.754	C
91	Bellanca Avenue and Century Boulevard	0.471	A	---	---	0.437	A
92	Aviation Boulevard/Florence Avenue and Manchester Avenue	0.697	B	0.583	A	0.629	B
93	Aviation Boulevard and Arbor Vitae Street	0.802	D	0.521	A	0.720	C
94	Aviation Boulevard and Century Boulevard	0.730	C	0.554	A	0.729	C
95	Aviation Boulevard and 104th Street	0.520	A	0.388	A	0.507	A
96	Aviation Boulevard and 111th Street	0.475	A	0.327	A	0.459	A
97	Aviation Boulevard and Imperial Highway	0.576	A	0.517	A	0.736	C
98	Aviation Boulevard and West 120th Street	0.856	D	---	---	0.728	C
99	Aviation Boulevard and El Segundo Boulevard	0.863	D	---	---	0.955	E
100	Aviation Boulevard and Rosecrans Avenue	0.946	E	---	---	0.920	E
101	Hindry Avenue and Manchester Boulevard	0.640	B	---	---	0.593	A
102	Hindry Avenue and Arbor Vitae Street [2/]	19.0 s	C	13.2 s	B	14.6 s	B
103	Concourse Way and Century Boulevard	0.249	A	---	---	0.323	A
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	0.622	B	0.275	A	0.531	A

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Table 4.12.2-6 (6 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS
105	La Tijera Boulevard and Centinela Avenue	0.794	C	---	---	0.749	C
106	Jefferson Boulevard and National Boulevard	0.824	D	---	---	0.620	B
107	Jefferson Boulevard and Higuera Street/Rodeo Road	0.586	A	---	---	0.629	B
108	La Cienega Boulevard and Jefferson Boulevard [1/]	0.912	E	---	---	0.931	E
109	La Cienega Boulevard and Rodeo Road	1.163	F	---	---	1.061	F
110	La Cienega Boulevard and Stocker Street [1/]	1.080	F	---	---	1.089	F
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	1.197	F	---	---	1.072	F
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	1.043	F	---	---	0.855	D
113	La Cienega Boulevard and La Tijera Boulevard	0.603	B	---	---	0.646	B
114	La Cienega Boulevard and Centinela Avenue [1/]	0.930	E	---	---	1.040	F
115	La Cienega Boulevard and Florence Avenue	0.715	C	0.722	C	0.952	E
116	La Cienega Boulevard and Manchester Boulevard	0.705	C	0.672	B	0.718	C
117	La Cienega Boulevard and Arbor Vitae Street	0.740	C	0.562	A	0.711	C
118	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Boulevard)	0.742	C	0.494	A	0.610	B
119	La Cienega Boulevard and Century Boulevard	0.891	D	0.511	A	0.823	D
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Boulevard)	0.352	A	---	---	0.267	A
121	La Cienega Boulevard and 104th Street	0.309	A	---	---	0.300	A
122	La Cienega Boulevard and Lennox Boulevard	0.447	A	---	---	0.576	A
123	La Cienega Boulevard and 111th Street	0.276	A	---	---	0.233	A
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Highway)	0.442	A	---	---	0.275	A
125	La Cienega Boulevard and Imperial Highway	0.406	A	0.176	A	0.648	B

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Table 4.12.2-6 (7 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS
126	La Cienega Boulevard and West 120th Street	0.644	B	---	---	0.841	D
127	La Cienega Boulevard and El Segundo Boulevard	0.616	B	---	---	0.814	D
128	Hindry Avenue and Rosecrans Avenue	0.649	B	---	---	0.716	C
129	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	0.842	D	0.655	B	0.707	C
130	I-405 Northbound Ramps and Century Boulevard	0.879	D	0.584	A	0.715	C
131	I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway	0.618	B	---	---	0.852	D
132	I-405 Northbound Ramps and El Segundo Boulevard	0.705	C	---	---	0.726	C
133	I-405 Northbound Ramps and Rosecrans Avenue	0.882	D	---	---	0.834	D
134	Inglewood Avenue and Manchester Boulevard	0.731	C	---	---	0.740	C
135	Inglewood Avenue and Arbor Vitae Street	0.642	B	---	---	0.703	C
136	Inglewood Avenue and Century Boulevard	0.784	C	---	---	0.877	D
137	Inglewood Avenue and Lennox Boulevard	0.828	D	---	---	0.915	E
138	Inglewood Avenue and Imperial Highway	0.945	E	---	---	1.021	F
139	Inglewood Avenue and El Segundo Boulevard	0.776	C	---	---	0.900	D
140	Inglewood Avenue and Rosecrans Avenue	0.826	D	---	---	0.983	E
141	La Brea Avenue/Overhill Drive and Stocker Street	0.872	D	---	---	0.987	E
142	La Brea Avenue and Slauson Avenue	0.777	C	---	---	0.877	D
143	La Brea Avenue and Centinela Avenue	0.896	D	---	---	0.940	E
144	La Brea Avenue and Florence Avenue	0.813	D	---	---	0.857	D
145	La Brea Avenue and Manchester Boulevard [1/]	0.792	C	---	---	0.746	C
146	La Brea Avenue and Arbor Vitae Street	0.553	A	---	---	0.690	B

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Table 4.12.2-6 (8 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	0.757	C	---	---	0.778	C
148	Hawthorne Boulevard and Lennox Boulevard	0.689	B	---	---	0.761	C
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	0.843	D	---	---	0.982	E
150	Hawthorne Boulevard and Imperial Avenue	0.697	B	---	---	0.851	D
151	Hawthorne Boulevard and 120th Street	0.570	A	---	---	0.711	C
152	Hawthorne Boulevard and El Segundo Boulevard	0.644	B	---	---	0.765	C
153	Hawthorne Boulevard and Rosecrans Avenue	0.667	B	---	---	0.817	D
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	0.652	B	---	---	0.770	C
155	Prairie Avenue and Manchester Boulevard	0.908	E	---	---	0.909	E
156	Prairie Avenue and Arbor Vitae Street	0.614	B	---	---	0.641	B
157	Prairie Avenue and Century Boulevard	0.816	D	---	---	0.837	D
158	Prairie Avenue and Lennox Boulevard	0.593	A	---	---	0.586	A
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	0.703	C	---	---	0.697	B
160	Prairie Avenue and Imperial Highway	1.194	F	---	---	0.812	D
161	Prairie Avenue and El Segundo Boulevard	0.850	D	---	---	0.854	D
162	Crenshaw Boulevard and Manchester Avenue [1/]	0.946	E	---	---	0.992	E
163	Crenshaw Boulevard and Century Boulevard	0.770	C	---	---	0.856	D
164	Crenshaw Boulevard and Imperial Highway	0.773	C	---	---	0.851	D
165	Western Avenue and Manchester Avenue	0.802	D	---	---	0.833	D
166	Western Avenue and Imperial Highway	0.818	D	---	---	0.798	C
167	I-405 Northbound Ramps and Culver Boulevard	0.741	C	---	---	0.663	B

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Table 4.12.2-6 (9 of 9): Detailed Intersection Level of Service Analysis – 2015 Existing Conditions

		A.M. PEAK HOUR		M.D. PEAK HOUR		P.M. PEAK HOUR	
MAP NO.	**INTERSECTION**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**
168	Walgrove Avenue and Washington Boulevard [3/]	***	F	---	---	***	F
169	Washington Boulevard and Washington Place at Wade Street	0.688	B	---	---	0.866	D
170	Inglewood Boulevard and Washington Boulevard	0.784	C	---	---	0.940	E
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Boulevard)	0.408	A	---	---	0.477	A
172	Washington Boulevard and Washington Place at Tilden Avenue	0.556	A	---	---	0.621	B
173	Overland Avenue and Sawtelle Boulevard [3/]	35.2 s	E	---	---	49.5 s	E
174	Canfield Avenue-Washington Boulevard (Ince Blvd) and Culver Boulevard	0.691	B	---	---	0.617	B
175	Ince Boulevard and Washington Boulevard	0.849	D	---	---	0.805	D
176	National Boulevard and Venice Boulevard	0.699	B	---	---	0.783	C
177	National Boulevard and Washington Boulevard	0.666	B	---	---	0.808	D
178	La Cienega Boulevard and Washington Boulevard	0.872	D	---	---	0.882	D
179	Centinela Avenue and Florence Avenue	0.866	D	---	---	0.745	C
180	Prairie Avenue and Florence Avenue	0.776	C	---	---	0.798	C
181	Van Ness Avenue and Manchester Avenue	0.916	E	---	---	0.914	E
182	Van Ness Avenue and Century Boulevard	0.638	B	---	---	0.649	B
183	Van Ness Avenue and Imperial Highway	0.788	C	---	---	0.806	D

NOTES:

--- = not studied

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection. Analyzed using CMA methodology to determine increase in V/C.

3/ Unsignalized intersection. Analyzed using ICU methodology to determine increase in V/C.

*** Indicates oversaturated conditions.(A traffic movement is oversaturated when the traffic demand for the movement exceeds the green-time capacity of the traffic signal such that a queue that exists at the beginning of the green time is not fully dissipated at the end of the green time for that movement.) Delay cannot be determined.

SOURCES: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

4.12.2.2.5 Methodology and Modeled Scenarios

Baseline 2015 Scenario

The analysis scenario representing Baseline (2015) Without Project conditions prior to implementation of any of the proposed Project components (as discussed above).

2015 With Project Scenario

The analysis of the 2015 With Project scenario examines how and where existing off-airport traffic conditions would change as a result of the ground access improvements proposed as part of the Project. This analysis scenario assumes the existing baseline level of activity at the Airport (i.e., existing generation of vehicle trips to and from the Airport) remains, but that the location of the trip ends within LAX would differ based on the proposed Project components.

Future Conditions Comparison Methodology

The off-airport transportation study includes analysis of impacts projected to occur at the 2024 and 2035 horizon years. Projected traffic conditions for both future years include increases in background traffic volumes due to ambient area-wide growth between 2015, 2024, and 2035, as well as changes in the transportation network (i.e., roads and intersections) during that period. Project-related operational impacts were assessed against both Baseline (conditions, as noted above), and against Future Without Project conditions, which are described in greater detail below.

The future traffic volume forecasts were developed using models and the land use/socio-economic data from SCAG's 2012 Regional Transportation Plan model data set; however, the data set was also updated to include planned roadway improvements, as outlined in Appendix O. To determine the future trip generation, adjustments were made to the 2014 passenger mode splits to reflect how changes to the regional transportation network would affect passenger mode choice and resultant vehicle activity at the Airport.

The detailed travel demand forecasting model was developed for the Study Area using the Southern California Association of Governments' (SCAG) Regional Transportation Plan (RTP) 2012 Transportation Model, and the City of Los Angeles' Westside Mobility Plan model as the base. The model includes regional growth projections based on LADOT and SCAG growth projections. The model was refined to include network and Traffic Analysis Zone (TAZ) enhancements to include more refined roadway and land use systems in the Study Area. Utilizing the calibrated model, the future 2024 and 2035 conditions were forecast in a manner consistent with the SCAG's RTP and the City of Los Angeles Westside Mobility Plan Models.

Working closely with the surrounding jurisdictions, a total of 212 probable development projects were analyzed, as identified in Table 3-2 in Chapter 3, *Overview of Project Setting*. Therefore, the impact analysis for off-airport traffic includes cumulative growth projections related to vehicle trips in the area surrounding LAX and traffic generated by reasonably foreseeable planned development. The location and size of all the probable development projects within the Study Area was compared to the model input growth data for the corresponding TAZ. Appropriate increases to land use data were made to increase all the probable development projects' growth in these TAZs. The networks in the model were modified to reflect roadway modifications in the Study Area, regional improvement plans, local specific plans, and programmed improvements. After applying the base network changes to the calibrated model, the Future without Project traffic volume forecasts during the morning and evening peak hours for the Year 2024 and Year 2035 were developed.

Future (2024 and 2035) Without Project Conditions

Utilizing the updated City of Los Angeles Travel Demand Model and the base network changes detailed in Section 4.12.2.5, the Future Without Project traffic volume forecasts during the morning and evening peak hours for 2024 and 2035 were developed.

Future (2024 and 2035) With Project Conditions

The passenger mode splits represent the proportion of total airline passengers using each vehicle mode during the peak hours analyzed. The volume of vehicles by mode were determined based on a calibrated trip generation model constructed using the traffic data collected on August 8, 2014. This model used the LAX 2011 Passenger Survey as the basis for estimating the passenger mode splits. The 2024 and 2035 mode split estimates were calculated based on the general mode split trends derived between the LAX 2006 Passenger Survey[5], the LAX 2011 Passenger Survey[6] and the LAX 2015 Passenger Survey[7], together with inputs from LAWA, including defining the modes to be relocated to each of the ITFs. (See Appendix O for further information on how projected mode splits were derived.) The LAX 2015 Passenger Survey showed that passengers were using Transportation Network Companies (TNCs) as an alternative transportation method and, as a result, the percentages of private vehicles, taxis, and shared ride vans decreased when compared to the 2011 Passenger Survey. The traffic volumes by mode for each of the ITFs were estimated by using the mode splits derived as explained above and from the calibration parameters from the 2014 baseline calibrated model.

Future trip generation models were developed for LAX using Airport passenger and employee trip generation data from the Federal Aviation Administration (FAA) Terminal Area Forecast (TAF[8]), and SCAG's regional aviation forecasts included in the 2012 RTP. Based on the FAA TAF and SCAG analysis, the passenger and employee forecasts for this analysis included the following parameters:

- 86 million annual passengers (MAP) for 2024;
- 95 MAP for 2035;
- Peak month average day airline passenger schedule;

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5 Applied Management and Planning Group, *2006 Air Passenger Survey Final Report Los Angeles International Airport*, conducted between July 31 and August 27, 2006 (peak) as well as October 03 and October 22, 2006 (non-peak), December 2007.

6 Unison Consulting Inc., *Los Angeles International Airport 2011 Passenger Survey*, conducted between August 22 and August 28, 2011 (peak) as well as October 17 and October 24, 2011 (non-peak), August 2012.

7 Unison Consulting Inc., *Final Report, Los Angeles International Airport 2015 Passenger Survey Results and Findings*, , February 2016.

8 Federal Aviation Administration, *APO Terminal Area Forecast 2014*, January 2015.

- Traffic Model for the LAX Central Terminal Area (CTA) validated based on observed counts in 2011, 2014, and 2015, and automated automatic vehicle identification (AVI) count data that provides number of vehicles by terminal by mode by time of day;
- A Parking Allocation Model for LAX based on transaction data and surveys of LAWA and private parking lots; and
- Employee trip generation is based on various factors including passengers, tenant facilities, current and work shifts, etc. The existing employee trip generation was factored 1.5 percent per year to account for the growth in employment associated with increased activity.

The trip generation estimates for 2024 and 2035 are shown in **Table 4.12.2-7** and **Table 4.12.2-8**, respectively. The future forecasts for traffic conditions from the travel demand forecasting model were converted to intersection turning movement volume forecasts utilizing a set of post-processing techniques detailed in the National Cooperative Highway Research Program (NCHRP) Report 255 – Highway Traffic Data for Urbanized Area Project Planning and Design.[9] Specifically, using the existing traffic count data and growth factors, the future traffic volume estimates at the intersections were developed. Methodology and detailed description of the post-processing methods are provided in Appendix O.

4.12.2.2.6 Congestion Management Program

The Congestion Management Program (CMP) analysis was conducted in accordance with the procedures outlined in the *2010 Congestion Management Program for Los Angeles County.*[10] The CMP requires that when a traffic impact report is prepared for a project, traffic impact analyses be conducted for select regional facilities based on the quantity of project traffic using these facilities. The CMP guidelines for determining the study area for analysis of CMP arterial monitoring intersections and for freeway monitoring locations are as follows:

- All CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the a.m. or p.m. weekday peak hours of adjacent street traffic.
- All CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips, in either direction, during either the a.m. or p.m. weekday peak hours.

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9 Transportation Research Board, National Research Council, National Cooperative Highway Research Program Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*, December 1982.

10 Los Angeles County Metropolitan Transportation Authority, *2010 Congestion Management Program*, October 2010.

[Draft]

Table 4.12.2-7: 2024 Trip Generation

	2024 FUTURE TRIPS WITHOUT PROJECT			2024 FUTURE TRIPS WITH PROJECT		
	IN	OUT	TOTAL	IN	OUT	TOTAL
AM PEAK HOUR						
Airport Parking	130	16	146	119	29	148
Employee Parking	861	318	1,179	861	318	1,179
Cargo Facilities	1,154	911	2,065	1,154	911	2,065
Rental Car Facilities	797	493	1,290	0	0	0
Off-Airport Parking	184	61	245	184	58	242
ITF West	0	0	0	810	810	1,620
Manchester Square	0	0	0	1,141	837	1,978
CTA	4,602	4,228	8,830	3,415	3,093	6,508
TOTAL	**7,728**	**6,027**	**13,755**	**7,684**	**6,056**	**13,740**
MD PEAK HOUR						
Airport Parking	91	56	147	94	59	153
Employee Parking	725	623	1,348	725	623	1,348
Cargo Facilities	1,120	963	2,083	1,120	963	2,083
Rental Car Facilities	1,393	773	2,166	0	0	0
Off-Airport Parking	170	104	274	166	102	268
ITF West [1]	0	0	0	1,063	1,063	2,126
Manchester Square	0	0	0	1,863	1,243	3,106
CTA [1]	6,321	6,538	12,859	4,760	4,918	9,678
TOTAL	**9,820**	**9,057**	**18,877**	**9,791**	**8,971**	**18,762**
PM PEAK HOUR						
Airport Parking	91	55	146	74	58	132
Employee Parking	384	665	1,049	384	665	1,049
Cargo Facilities	1,109	1,317	2,426	1,109	1,317	2,426
Rental Car Facilities	677	784	1,461	0	0	0
Off-Airport Parking	114	121	235	110	119	229
ITF West	0	0	0	990	990	1,980
Manchester Square	0	0	0	1,114	1,208	2,322
CTA	6,026	6,767	12,793	4,481	5,063	9,544
TOTAL	**8,401**	**9,709**	**18,110**	**8,262**	**9,420**	**17,682**

SOURCE: Ricondo and Associates, Inc., July 2016.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

[Draft]

Table 4.12.2-8: 2035 Trip Generation

	2035 FUTURE TRIPS WITHOUT PROJECT			2035 FUTURE TRIPS WITH PROJECT		
	IN	OUT	TOTAL	IN	OUT	TOTAL
AM PEAK HOUR						
Airport Parking	119	32	151	103	34	137
Employee Parking	987	364	1,351	987	364	1,351
Cargo Facilities	1,369	1,081	2,450	1,369	1,081	2,450
Rental Car Facilities	815	481	1,296	0	0	0
Off-Airport Parking	155	64	219	151	61	212
ITF West	0	0	0	864	864	1,728
Manchester Square	0	0	0	1,186	852	2,038
CTA	4,828	4,387	9,215	3,574	3,134	6,708
TOTAL	**8,273**	**6,409**	**14,682**	**8,234**	**6,390**	**14,624**
MD PEAK HOUR						
Airport Parking	77	59	136	83	64	147
Employee Parking	831	714	1,545	831	714	1,545
Cargo Facilities	1,329	1,142	2,471	1,329	1,142	2,471
Rental Car Facilities	1,489	718	2,207	0	0	0
Off-Airport Parking	158	110	268	154	106	260
ITF West	0	0	0	1,155	1,155	2,310
Manchester Square	0	0	0	2,007	1,236	3,243
CTA	6,587	6,840	13,427	4,947	5,104	10,051
TOTAL	**10,471**	**9,583**	**20,054**	**10,506**	**9,521**	**20,027**
PM PEAK HOUR						
Airport Parking	85	64	149	57	70	127
Employee Parking	439	762	1,201	439	762	1,201
Cargo Facilities	1,316	1,562	2,878	1,316	1,562	2,878
Rental Car Facilities	759	912	1,671	0	0	0
Off-Airport Parking	113	129	242	110	125	235
ITF West	0	0	0	1,150	1,150	2,300
Manchester Square	0	0	0	1,274	1,406	2,680
CTA	6,281	7,185	13,466	4,659	5,308	9,967
TOTAL	**8,993**	**10,614**	**19,607**	**9,005**	**10,383**	**19,388**

SOURCE: Ricondo and Associates, Inc., July 2016.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

CMP arterial monitoring stations traffic impact analyses were conducted at 14 CMP arterial monitoring stations (i.e., intersections) in the study area. The CMP arterial monitoring stations identified for analysis were analyzed using the CMA Circular 212 method or the ICU method. They include:

- Lincoln Boulevard and Venice Boulevard (CMP ID #50)
- Lincoln Boulevard and Marina (SR-90) Expressway (CMP ID #49)
- Lincoln Boulevard and Manchester Avenue (CMP ID #48)
- Lincoln Boulevard and Sepulveda Boulevard (CMP ID #63)
- Sepulveda Boulevard and Manchester Avenue (CMP ID #52)
- Sepulveda Boulevard and El Segundo Boulevard (CMP ID #20)
- Sepulveda Boulevard and Rosecrans Avenue (CMP ID #110)
- Centinela Avenue and Venice Boulevard (CMP ID #70)
- Overland Avenue and Venice Boulevard (CMP ID #15)
- La Cienega Boulevard and Jefferson Boulevard (CMP ID #46)
- La Cienega Boulevard and Centinela Avenue (CMP ID #47)
- La Cienega Boulevard and Stocker Street (CMP ID #95)
- La Brea Avenue and Manchester Boulevard (CMP ID #25)
- Crenshaw Boulevard and Manchester Avenue (CMP ID #24)

4.12.2.2.7 Freeway Analysis

In addition to intersection and CMP analyses, the off-Airport traffic analysis also assesses the impacts of the proposed Project to freeway mainline segments, freeway high-occupancy vehicle (HOV) segments, on- and off-ramp junctions, and arterial intersections operations.

Freeway Mainline Analysis

A regional analysis was conducted to quantify impacts of the proposed Project on the regional freeway system serving the Study Area based on significant traffic impact criteria developed in conjunction with Caltrans staff.[11] This impact analysis was conducted for 23 freeway mainline segments during the morning and evening peak hours. The freeway mainline segments were identified along the I-405 Freeway, I-105 Freeway, and SR-90 Freeway, including the following:

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[11] Memorandum from Moe Bhuyian, Area Traffic Engineer, Office of Traffic Engineering – South, Caltrans to DiAnna Watson, LD-IGR/CEQA Review Branch, Division of Planning & Local Assistance, Caltrans, "LAWA-LAMP Traffic Thresholds of Significance," June 8, 2016.

- I-405 Freeway south of Venice Boulevard (Post Mile 27.81)
- I-405 Freeway at Culver Boulevard (Post Mile 27.35)
- I-405 Freeway at Braddock Boulevard (Post Mile 26.84)
- I-405 Freeway north of SR-90 Freeway (Post Mile 26.15)
- I-405 Freeway at Jefferson Boulevard (Post Mile 26.00)
- I-405 Freeway at Centinela Avenue (Post Mile 25.41)
- I-405 Freeway at Howard Hughes Parkway (Post Mile 25.10/24.90)
- I-405 Freeway at La Tijera Boulevard (Post Mile 24.25)
- I-405 Freeway at La Cienega Boulevard (Post Mile 23.61)
- I-405 Freeway south of Manchester Avenue (Post Mile 23.36/23.29)
- I-405 Freeway at Century Boulevard (Post Mile 22.68/22.00)
- I-405 Freeway south of I-105 Freeway (Post Mile 20.60)
- I-405 Freeway south of El Segundo Boulevard (Post Mile 19.57)
- I-405 Freeway at Rosecrans Avenue (Post Mile 19.16)
- I-105 Freeway at Hughes Way (Post Mile R.90)
- I-105 Freeway at Douglas Street (Post Mile R1.30)
- I-105 Freeway at Imperial Highway (Post Mile R1.80)
- I-105 Freeway west of Hawthorne Boulevard (Post Mile R2.82/2.60)
- I-105 Freeway west of Prairie Avenue (Post Mile R3.10/3.30)
- I-105 Freeway west of Crenshaw Boulevard (Post Mile R4.20/4.00)
- I-105 Freeway West of Normandie Avenue (Post Mile R5.50)
- SR-90 Freeway east of Ballona Creek (Post Mile 1.24)
- SR-90 Freeway at Centinela Avenue (Post Mile 1.61)

The freeway mainline segments operating conditions (i.e., level of service) analysis was conducted in accordance with the HCM 2010 Operational Methodology. The HCM 2010 states that, "A basic freeway segment can be characterized by three performance measures: density in passenger cars per mile per lane (pc/mi/ln), space mean speed in miles per hour (mi/h), and the ratio of demand flow rate to capacity (v/c). Each of these measures is an indication of how well traffic is being accommodated by the basic freeway segment."

Because speed is constant through a broad range of flows and the V/C ratio is not discernible to road users (except at capacity), the service measure for basic freeway segments is density, which is sensitive to flow rates throughout the range of flows. Operating conditions on freeways were classified by LOS based on the measured flow (density) past a point on a section of freeway. Freeway LOS definitions are shown on **Table 4.12.2-9**.

Table 4.12.2-9: Freeway Level of Service Definitions

LEVEL OF SERVICE	DENSITY (PC/MI/LN)
A	< 11.0
B	> 11.0 and < 18.0
C	> 18.0 and < 26.0
D	> 26.0 and < 35.0
E	> 35.0 and < 45.0
F	> 45.0

NOTE:

pc/mi/ln = passenger cars per mile per lane

SOURCE: Transportation Research Board, *Highway Capacity Manual*, 2010.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

HOV Segment Traffic Analysis

Impacts to the following four high occupancy vehicle (HOV) segments were analyzed using Caltrans methodologies and compared to significance criteria discussed in Section 4.12.2.4:

- I-405 Freeway north of SR-90 Freeway (Post Mile 26.15)
- I-405 Freeway at La Tijera Boulevard (Post Mile 24.25)
- I-405 Freeway south of Manchester Avenue (Post Mile 23.36/23.29)
- I-405 Freeway at Century Boulevard (Post Mile 22.68/22.00)

On- and Off-Ramp Junctions

An analysis of the vehicle queues at the freeway on- and off-ramps was conducted during the morning and evening peak hours. Per Caltrans methodology and procedures, the traffic queue length on the off-ramp is compared to the storage length of the ramp at 85 percent capacity, which can include a portion of the freeway auxiliary lane. Failing ramp conditions were determined if the queue was long enough to result in backing up into the freeway mainline. Analyzed on- and off-ramp locations are listed in **Table 4.12.2-10**.

Table 4.12.2-10: On- and Off-Ramp Junctions Analyzed

ON-RAMP JUNCTIONS	OFF-RAMP JUNCTIONS
Lincoln Boulevard and SR-90 Ramps	Centinela Avenue and Sanford Street/SR-90 Westbound Ramps
Centinela Avenue and Sanford Street/SR-90 Westbound Ramps	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps
Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps (s/o Venice Boulevard)
Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps (s/o Venice Boulevard)	I-405 Southbound Ramps and Jefferson Boulevard
I-405 Southbound Ramps and Jefferson Boulevard	I-405 Northbound Ramps and Jefferson Boulevard
I-405 Northbound Ramps and Jefferson Boulevard	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps (s/o Venice Boulevard)
Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps (s/o Venice Boulevard)	I-405 Southbound Ramps and Howard Hughes Parkway
Sepulveda Boulevard and I-105 Westbound Off-Ramp (n/o Imperial Highway)	I-405 Northbound Ramps and La Tijera Boulevard
SR-90 Westbound Ramps and Slauson Avenue	I-405 Southbound Ramps and La Tijera Boulevard
I-405 Southbound Ramps and Howard Hughes Parkway	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway
Nash Street /I-105 Westbound Ramps and Imperial Highway	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Boulevard)
I-405 Northbound Ramps and La Tijera Boulevard	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Boulevard)
I-405 Southbound Ramps and La Tijera Boulevard	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Highway)
I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue
La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Boulevard)	I-405 Northbound Ramps and Century Boulevard
La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Boulevard)	I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway (eastbound direction)
La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Highway)	I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway (westbound direction)
I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	I-405 Northbound Ramps and El Segundo Boulevard (eastbound direction)
I-405 Northbound Ramps and Century Boulevard	I-405 Northbound Ramps and El Segundo Boulevard (westbound direction)
I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway	I-405 Northbound Ramps and Rosecrans Avenue (eastbound direction)
I-405 Northbound Ramps and El Segundo Boulevard	I-405 Northbound Ramps and Rosecrans Avenue (westbound direction)
I-405 Northbound Ramps and Rosecrans Avenue	I-105 Eastbound On-Ramp (e/o Hawthorne Boulevard) and Imperial Highway
Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	I-405 Northbound Ramps and Culver Boulevard
Prairie Avenue and West 112th Street/I-105 Off-Ramp	Centinela Avenue and Sanford Street/SR-90 Westbound Ramps
I-405 Northbound Ramps and Culver Boulevard	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps
Sawtelle Boulevard and I-405 Southbound Off-Ramp (n/o of Culver Boulevard)	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps (s/o Venice Boulevard)
	I-405 Southbound Ramps and Jefferson Boulevard

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Arterial Intersections Analysis

A total of 48 study intersections are State Highway arterial and freeway ramp intersection locations that also fall under Caltrans jurisdiction. Of these 48 intersections, 27 intersections are freeway ramp locations and 21 intersections are located along a designated State Highway. These locations are listed in **Table 4.12.2-11**.

Table 4.12.2-11: Freeway Arterial Intersection Locations Analyzed

FREEWAY RAMP INTERSECTIONS	STATE HIGHWAY INTERSECTIONS
Lincoln Boulevard and SR-90 Ramps	Lincoln Boulevard and Venice Boulevard
Centinela Avenue and Sanford Street/SR-90 Westbound Ramps	Lincoln Boulevard and Washington Boulevard
Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	Lincoln Boulevard and Bali Way
Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	Lincoln Boulevard and Mindanao Way
I-405 Southbound Ramps and Jefferson Boulevard	Lincoln Boulevard and Fiji Way
I-405 Northbound Ramps and Jefferson Boulevard	Lincoln Boulevard and Jefferson Boulevard
Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	Lincoln Boulevard and Bluff Creek Drive
Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	Lincoln Boulevard and Loyola Marymount University Drive
SR-90 Westbound Ramps and Slauson Avenue	Lincoln Boulevard and 83rd Street
I-405 Southbound Ramps and Howard Hughes Parkway	Lincoln Boulevard and Manchester Avenue
Nash Street /I-105 Westbound Ramps and Imperial Highway	Lincoln Boulevard and La Tijera Boulevard
I-405 Northbound Ramps and La Tijera Boulevard	Centinela Avenue and Venice Boulevard
I-405 Southbound Ramps and La Tijera Boulevard	Overland Avenue and Venice Boulevard
I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	Sepulveda Boulevard and Lincoln Boulevard
La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Boulevard)	Sepulveda Boulevard and Century Boulevard
La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Boulevard)	Sepulveda Boulevard and Imperial Highway
La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Highway)	Sepulveda Boulevard and Mariposa Avenue
I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	Sepulveda Boulevard and Grand Avenue
I-405 Northbound Ramps and Century Boulevard	Sepulveda Boulevard and El Segundo Boulevard
I-405 Northbound Ramps (e/o La Cienega Boulevard) and Imperial Highway	Sepulveda Boulevard and Rosecrans Avenue
I-405 Northbound Ramps and El Segundo Boulevard	National Boulevard and Venice Boulevard
I-405 Northbound Ramps and Rosecrans Avenue	
Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	
I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	
Prairie Avenue and West 112th Street/I-105 Off-Ramp	
I-405 Northbound Ramps and Culver Boulevard	
Sawtelle Boulevard and I-405 Off-Ramp (n/o Culver Boulevard)	

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

4.12.2.3 Existing Conditions

The assessment of existing conditions includes an inventory of the existing freeway and arterial street systems, an analysis of traffic volumes and current operating conditions, and an analysis of the existing public transit, pedestrian, and bicyclist services.

As shown in Table 4.12.2-5, 161 (or 88 percent) of the analyzed intersections during the morning peak hour and 156 (or 85 percent) of the analyzed intersections during the evening peak hour operated at LOS D or better on weekdays. Approximately 8 percent of the intersections (14 of 183) in the morning peak hour and 10 percent of the intersections (19 of 183) in the evening peak hour operated at LOS E. At these locations operating at LOS E, motorists experience measurable delay and traffic flow is restricted. Approximately 4 percent of the intersections (8 of 183) during both the morning and evening peak hours experienced LOS F (congested) conditions in 2015.

As discussed in Section 4.12.2.2.4, LAX and its facilities including passengers, employees, cargo, shuttles and rental car facilities currently generate a total of approximately 12,300 trips in the morning peak hour and 12,800 trips in the evening peak hour.

4.12.2.3.1 Existing Street System

The existing street system within the Study Area consists of a regional highway system including major arterials and a local street system including secondary arterials, collectors, and local streets. The San Diego (I-405) Freeway, the Glenn Anderson (I-105) Freeway, and the Marina (SR-90) Freeway provide regional access to the Project site. Brief descriptions of these roadway facilities, including number of lanes, speed limits, parking availability, and functional classes per the City of Los Angeles Mobility Plan 2035, are listed below. The existing lane configurations of the analyzed intersections are included in Appendix O.

- **San Diego Freeway (I-405)** runs north-south to the east of LAX and extends from the San Fernando Valley to Orange County. The San Diego Freeway generally provides four lanes in each direction plus a carpool lane in certain segments. Ramps located in the Study Area provide access to/from Rosecrans Avenue, El Segundo Boulevard, Imperial Highway, Century Boulevard, Manchester Avenue/La Cienega Boulevard, La Tijera Boulevard, Howard Hughes Parkway, Sepulveda Boulevard, Jefferson Boulevard, Culver Boulevard, and Venice Boulevard/Washington Boulevard.
- **Glenn Anderson Freeway (I-105)** runs from its westerly terminus on Imperial Highway west of Sepulveda Boulevard to its easterly terminus at the San Gabriel Freeway (I-605) in the City of Norwalk. The Glenn Anderson Freeway generally provides four lanes in each direction, a carpool lane in each direction, and a light rail line (the Metro Green Line) down its center median. Ramps located in the Study Area include access to/from Imperial Highway, Sepulveda Boulevard/Imperial Highway, Nash Street, La Cienega Boulevard/Aviation Boulevard, Hawthorne Boulevard, Prairie Avenue, and Crenshaw Boulevard.
- **Marina Freeway (SR-90)** runs east-west and extends from Lincoln Boulevard in Marina del Rey eastward to Slauson Avenue in southern Culver City. The Marina Freeway generally provides two lanes in each direction plus auxiliary lanes in certain segments. Ramps include Lincoln Boulevard, Mindanao Way, Culver Boulevard, Centinela Avenue, Slauson Avenue, and I-405.

- **Admiralty Way** runs east-west with two lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is generally not allowed along Admiralty Way, and the posted speed limit is 40 miles per hour (mph).
- **Airport Boulevard** is a Class II Major Highway that runs north-south with two to three lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is generally prohibited on both sides of Airport Boulevard, and the posted speed limit is 35 mph.
- **Arbor Vitae Street** is a Class II Major Highway north of LAX that runs east-west with generally two lanes in each direction plus left-turn channelization at most major intersections throughout the Study Area. Restricted parking is allowed along certain segments of Arbor Vitae Street, and the posted speed limit is 35 mph.
- **Aviation Boulevard** is a Class II Major Highway that runs north-south with two lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is generally prohibited on both sides of Aviation Boulevard, and the posted speed limit is 40 mph.
- **Centinela Avenue** is a Major Arterial (in Inglewood) and a Class II Major Highway (in the City of Los Angeles) with two to three lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Centinela Avenue runs east-west to the east of Jefferson Boulevard and north-south to the north of Jefferson Boulevard. Parking is allowed along Centinela Avenue with some restrictions, and the posted speed limit is 40 mph.
- **Century Boulevard** is a Class II Major Highway that runs east-west and directly feeds into the LAX CTA. It has three to four lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is not allowed along Century Boulevard, and the posted speed limit is 35 mph.
- **Crenshaw Boulevard** is a Major Arterial that runs north-south with two to three lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is allowed on certain segments of Crenshaw Boulevard, and the posted speed limit ranges from 35 to 40 mph.
- **Culver Boulevard** is a Class II Major Highway with two lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is generally not allowed along Culver Boulevard but there are some segments with restricted parking. The posted speed limit is 40 mph.
- **Douglas Street** is a Secondary Arterial that runs north-south with two to three lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is generally not allowed along Douglas Street but there are some segments with restricted parking. The posted speed limit is 40 mph.
- **Duquesne Avenue** is a secondary arterial roadway in Culver City that traverses in a north-south direction. This roadway offers two travel lanes, one lane per direction. On-street parking is generally allowed on both sides of the street. The posted speed limit is 35 miles per hour.
- **El Segundo Boulevard** is a Major Arterial south of LAX that runs east-west with one to three lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is allowed on certain segments along El Segundo Boulevard, and the posted speed limit ranges from 35 to 40 mph.

- **Florence Avenue** is a Major Arterial that runs east-west with two to three lanes in each direction and left-turn channelization at major intersections throughout the Study Area. Parking is generally not allowed along most of Florence Avenue, although some parking is permitted east of La Brea Avenue. The posted speed limit is 35 mph.
- **Hawthorne Boulevard/La Brea Avenue** is a Major Arterial that runs north-south with three to four lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is generally allowed along most of Hawthorne Boulevard/La Brea Avenue, with some center median parking provided. The posted speed limit is 35 mph.
- **Imperial Highway** is a Class II Major Highway directly south of LAX that runs east-west with two to three lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is not allowed on Imperial Highway, and the posted speed limit ranges from 40 to 50 mph. Bike lanes currently exist on both sides of Imperial Highway between Vista del Mar and Aviation Boulevard.
- **Inglewood Avenue** is a Minor Arterial that runs north-south with one to two lanes in each direction plus left-turn channelization at most major intersections throughout the Study Area. Parking is generally allowed on both sides of Inglewood Avenue, and the posted speed limit is 35 mph.
- **Jefferson Boulevard** is a Class II Major Highway that runs east-west with two to three lanes in each direction plus left-turn channelization at most major intersections in the Study Area. With a few exceptions, parking is generally not allowed on either side of Jefferson Boulevard, and the speed limit ranges from 35 to 45 mph.
- **La Cienega Boulevard** is a Class II Major Highway that runs north-south with two to three lanes in each direction plus left-turn channelization at most major intersections in the Study Area. Parking is generally allowed south of La Tijera Boulevard. Between La Tijera Boulevard and Rodeo Road, La Cienega Boulevard is a Class I Major Highway with three lanes in each direction and restricted access; parking is not allowed. The speed limit in the study area ranges from 40 to 55 mph.
- **La Tijera Boulevard** is a Class II Major Highway north of LAX that runs northeast-southwest with two to three lanes in each direction plus left-turn channelization at major intersections. Parking is allowed on certain segments of La Tijera Boulevard, and it has a posted speed limit of 35 mph.
- **Lincoln Boulevard** is a Class I Major Highway northwest of LAX with two to four lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. It begins at Sepulveda Boulevard just north of LAX and extends to the northwest. Parking is allowed on certain segments of Lincoln Boulevard, and the posted speed limit ranges from 40 to 55 mph. Lincoln Boulevard is State Route 1 in the Study Area. Bike lanes currently exist on both sides of Lincoln Boulevard between Jefferson Boulevard and Loyola Marymount University (LMU) Drive/Bluff Trail Road.
- **Manchester Avenue** is a Major Arterial north of LAX that runs east-west. It generally has two lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is allowed along most of Manchester Avenue with some restricted segments. The posted speed limit along Manchester Avenue ranges from 25 to 35 mph. This arterial is known as Manchester Boulevard in the City of Inglewood. Bike lanes currently exist on both sides of Manchester Avenue between Lincoln Boulevard and Sepulveda Boulevard.

- **Nash Street** is a secondary arterial roadway in the City of El Segundo. It runs in a north/south direction with two lanes in each direction plus left-turn channelization at major intersections through the study area. Parking is generally not allowed along this roadway. The posted speed limit is 35 mph. The I-105 Freeway has a westbound off-ramp at Nash Street.
- **National Boulevard** is classified as a secondary arterial roadway in Culver City and as an Avenue II in the City of Los Angeles. It runs in an east-west direction and generally offers two lanes in each direction. On-street parking is available along many stretches of this roadway, generally, except at major intersections where turn lanes are provided. The posted speed limit is 35 miles per hour. National Boulevard provides access to the I-10 Freeway.
- **Nash Street** is a Secondary Arterial that runs north-south with two lanes in each direction plus left turn channelization at major intersections throughout the Study Area. Parking is generally not allowed along Nash Street. The posted speed limit is 35 mph.
- **Overland Avenue** is a Class II Major Highway north of LAX that runs north-south with two lanes in each direction plus left-turn channelization at most major intersections throughout the Study Area. Restricted parking is allowed along most of Overland Avenue, and the posted speed limit is 35 mph.
- **Pershing Drive** is a Major Arterial west of LAX that runs north-south with primarily two lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. Parking is allowed on both sides of Pershing Drive between Westchester Parkway and its northerly terminus at Culver Boulevard. Although parking is prohibited between Imperial Highway and Westchester Parkway, there are bike lanes within these limits. Bike lanes currently exist on both sides of Pershing Drive between Westchester Parkway and Imperial Highway.
- **Prairie Avenue** is a Major Arterial east of LAX that runs north-south with three lanes in each direction plus left-turn channelization at most major intersections through the Study Area. Parking is generally allowed along both sides of Prairie Avenue and the posted speed limit is 35 mph.
- **Rosecrans Avenue** is a Major Arterial south of LAX that runs east-west with two to three lanes in each direction plus left-turn channelization at most major intersections throughout the Study Area. Parking is not allowed along Rosecrans Avenue within the Study Area, except for limited restricted parking segments. The posted speed limit ranges from 40 to 45 mph.
- **Sawtelle Boulevard** is a Secondary Highway north of LAX with one to two lanes in each direction. Parking is allowed along most of Sawtelle Boulevard on both sides, and the posted speed limit ranges from 25 to 35 mph.
- **Sepulveda Boulevard** is a Class I Major Highway with three to four lanes in each direction plus left-turn channelization at major intersections throughout the Study Area. It runs north-south and intersects with the main entrance and exit of the Airport's CTA at Century Boulevard, providing direct access to LAX. Parking is generally prohibited on both sides of Sepulveda Boulevard, with the exception of the stretch between Manchester Avenue and 92nd Street. North of Ballona Creek, Sepulveda Boulevard has two lanes in each direction plus left-turn channelization at major intersections. Between Sawtelle Boulevard and Green Valley Circle, there are two southbound lanes and two left-turn lanes at major intersections. The speed limit ranges from 30 to 45 mph. Sepulveda Boulevard is State Route 1 south of its intersection with Lincoln Boulevard. Bike lanes currently exist on both sides of Sepulveda Boulevard between Centinela Avenue and Manchester Avenue.

- **Slauson Boulevard** ranges from a Local Street to a Class II Major Highway in the Study Area. It ranges from one to three lanes in each direction plus left-turn channelization at major intersections. Parking is only allowed on Slauson Boulevard where it is a local street. The posted speed limit ranges from 25 to 40 mph.
- **Venice Boulevard** is a Class II Major Highway that runs east-west with two to three lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is generally allowed on both sides of Venice Boulevard, and the posted speed limit is 35 mph. Bike lanes currently exist on one or both sides of Venice Boulevard between Pacific Avenue and Crenshaw Boulevard.
- **Vista del Mar** is a Class II Major Highway that runs north-south with two lanes in each direction plus left-turn channelization at major intersections in the Study Area. Parking is allowed along some segments of Vista del Mar, and the posted speed limit is 45 mph.
- **Washington Boulevard** is a Class II Major Highway that runs east-west with two lanes in each direction plus left-turn channelization at major intersections in the Study Area. Restricted parking along Washington Boulevard is generally allowed, and the posted speed limit ranges from 30 to 35 mph. There are bike lanes on Washington Boulevard between Pacific Avenue and Abbot Kinney Boulevard.
- **Westchester Parkway** is a Class II Major Highway just north of LAX that runs east-west with two lanes plus bike lanes in each direction. Its limits are Pershing Drive to the west and Airport Boulevard to the east. Except for a short stretch in Westchester Village, parking is not allowed along Westchester Parkway. The posted speed limit ranges from 30 to 50 mph. There are bike lanes on both sides of Westchester Parkway between Sepulveda Boulevard and Pershing Drive.

Some of the local roadways serving the LAWA facilities include 96th Street, 98th Street, Jenny Avenue, Vicksburg Avenue, Avion Drive and Bellanca Avenue. A brief description of these facilities follows:

- **96th Street** is classified as a collector roadway and runs in an east-west direction. Between Sepulveda Boulevard and Airport Boulevard, the roadway provides four travel lanes, two lanes in each direction with left-turn lanes at key intersections. Parking is not allowed along this segment of roadway. East of Airport Boulevard, the roadway provides one lane in each direction with parking allowed on both sides of the street. The *prima facie*[12] speed limit is 25 miles per hour. Bike lanes are provided on both sides of the street from Sepulveda Boulevard to Airport Boulevard. 96th Street provides access to Airport Parking Lot C and Avis car rental.
- **98th Street** is a local roadway that traverses in an east-west direction. The roadway generally offers two travel lanes, one lane in each direction with a central left-turn median. The *prima facie* speed limit is 25 miles per hour. Restricted parking is available along both sides of the street. 98th Street provides access to Budget car rental.

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12 A prima facie speed limit is a default speed limit that applies when no other specific speed limit is posted, and which may be exceeded by a driver.

- **Avion Drive** is a local, private roadway and runs in a north-south direction. The roadway provides two travel lanes, one lane in each direction. The *prima facie* speed limit is 25 miles per hour.
- **Bellanca Avenue** is classified as a local roadway and runs in a north-south direction. Within the Study Area, the roadway generally offers two travel lanes, one lane in each direction. The *prima facie* speed limit is 25 miles per hour.
- **Jenny Avenue** is a local roadway and runs in a north-south direction. The roadway generally offers two lanes in the southbound direction and one lane in the northbound direction. The *prima facie* speed limit is 25 miles per hour along this roadway. There is no parking on either side of the street. Jenny Avenue provides access to Avis car rental as well as Airport Parking Lots C and D.
- **Vicksburg Avenue** is classified as a local roadway and runs in a north-south direction. The roadway generally offers two travel lanes, one lane in each direction, with the exception that the street has two full-time lanes northbound between 96th Street and 98th Street. The *prima facie* speed limit is 25 miles per hour. Restricted parking is available on both sides of the street, except on the east side between 96th Street and 98th Street, where it is completely prohibited.

Access to the terminals is provided via the CTA roadway system. The CTA roadway system consists of a two-level roadway (upper and lower levels circulating in a counter-clockwise direction) with vehicular access to both the departures (upper) and arrivals (lower) levels from Century Boulevard, Sepulveda Boulevard and the 96th Street Bridge/Sky Way. On-Airport traffic existing conditions are discussed in Section 4.12.1.

4.12.2.3.2 Existing Public Transit Service

Fifteen bus lines currently serve the LAX City Bus Center, located on W. 96th Street, and the Metro Green Line Station, located at Aviation Boulevard and Imperial Highway. Seven bus lines are operated by the Los Angeles County Metropolitan Transportation Authority (MTA), two bus lines are operated by the Culver City Bus (CC), two bus lines are operated by Santa Monica Big Blue Bus (SM), two bus lines are operated by the Los Angeles Department of Transportation (LADOT CE), one bus is operated by Torrance Transit (TT) and one bus line is operated by the City of Redondo Beach - Beach City Transit (BCT). These transit lines are described below:

- **MTA Line 40** is a local north-south line that provides service from Downtown Los Angeles to Redondo Beach and travels primarily along Aviation Boulevard and Century Boulevard within the Study Area. This line runs every day, including holidays, at a peak frequency of approximately 14-20 minutes during commuter hours. Line 40 also provides late night service to the LAX City Bus Center. The northern terminus is at Union Station in Downtown Los Angeles. The southern terminus is at the South Bay Galleria in Redondo Beach.
- **MTA Line 102** is a local east-west line that provides service from South Gate to LAX and travels primarily along Westchester Parkway within the Study Area. This line runs every day, including holidays, at a peak frequency of approximately 30 minutes during peak commuter hours. The eastern terminus is at the intersection of Palm Place and Seville Avenue in South Gate. The western terminus is at the LAX City Bus Center in Los Angeles.

- **MTA Line 111/311** is a local east-west line that provides service from Norwalk to LAX and travels primarily along Arbor Vitae Street and 96th Street within the Study Area. This line runs every day, including holidays, at a peak frequency of approximately 17 minutes during peak commuter hours. The eastern terminus is at Metro Green Line Norwalk Station in Norwalk. The western terminus is at the LAX City Bus Center in Los Angeles.
- **MTA Line 117** is a local east-west line that provides service from Downey to the LAX Bus Center and travels primarily along Century Boulevard and 96th Street within the Study Area. This line runs every day, including holidays, at a peak frequency of 20-22 minutes during peak commuter hours. The eastern terminus is at the Lakewood Boulevard Green Line Station in Downey. The western terminus is at the LAX City Bus Center in Los Angeles.
- **MTA Line 120** is a local east-west line that provides service from Whittier to Los Angeles and travels primarily along Aviation Boulevard and Imperial Highway within the Study Area. This line runs every day, including holidays, at a peak frequency of 35 minutes to one hour during peak commuter hours. The eastern terminus is at Whittwood Town Center in Whittier. The western terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.
- **MTA Line 232** is a local north-south line that provides service from Long Beach to LAX and travels primarily along Sepulveda Boulevard and 96th Street within the Study Area. This line runs every day, including holidays, at a peak frequency of 14-19 minutes during peak commuter hours. The northern terminus is at the LAX City Bus Center in Los Angeles. The southern terminus is at the Long Beach Transit Mall in Long Beach.
- **MTA Line 625** is an east-west shuttle line that provides service from the Metro Green Line Station on Aviation Boulevard to LAX and travels primarily along Imperial Highway and World Way West within the Study Area. This line runs Monday through Friday, at a frequency of 15-25 minutes during peak commuter hours. The western terminus is at the end of World Way West in LAX. The eastern terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.
- **LADOT CE Line 438** is a Commuter Express line that provides service from Downtown Los Angeles to Redondo Beach and travels primarily along Imperial Highway within the Study Area. This line runs Monday through Friday at a peak frequency of approximately 8 to15 minutes during peak commuter hours. Service is not provided on weekends and holidays. The southern terminus is at the intersection of Palos Verdes Boulevard / Via Valencia in Redondo Beach. The eastern terminus is at the intersection of Temple Street / Los Angeles Street in Downtown Los Angeles.
- **LADOT CE Line 574** is a commuter north-south line that provides service between Sylmar and El Segundo and travels primarily along Sepulveda Boulevard within the Study Area. This line runs Monday through Friday at a peak frequency of 25-30 minutes during peak commuter hours. No service is provided on weekends and holidays. The northern terminus is at the Sylmar Metrolink Station in Sylmar. The southern terminus is at the intersection of Space Park Drive and Aviation Boulevard in El Segundo.
- **Culver City Bus Line 6** is a local north-south line that provides service from Westwood to the Metro Green Line Station and travels primarily along Sepulveda Boulevard and Aviation Boulevard via the LAX Bus Center within the Study Area. This line runs every day at a frequency of approximately 18-20

minutes. The northern terminus is at the University of California, Los Angeles. The southern terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.

- **Culver City Bus Rapid Line 6** is a north-south express line that provides service from Westwood to the Metro Green Line Station and travels primarily along Sepulveda Boulevard and Aviation Boulevard via the LAX Bus Center within the Study Area. This line runs Monday through Friday from 5:50-9:57 a.m. and 2:20-7:35 p.m. at a frequency of 15 minutes. Service is not provided on weekends and holidays. The northern terminus is at the University of California, Los Angeles (UCLA). The southern terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.
- **Santa Monica Big Blue Bus Line 3** is a local north-south line that provides service from Westwood to the LAX City Bus Center and Metro Green Line Station at Aviation Boulevard/Imperial Highway. This line travels primarily along Manchester Avenue, Sepulveda Boulevard, and Aviation Boulevard within the Study Area. This line runs every day, including holidays, at a peak frequency of 10-12 minutes during peak commuter hours. The northern terminus is at the University of California Los Angeles (UCLA) Ackerman Terminal in Westwood. The southern terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.
- **Santa Monica Big Blue Bus Line Rapid 3** is a north-south "rapid bus" line that provides service from Santa Monica to the LAX City Bus Center and Metro Green Line Station at Aviation Boulevard/Imperial Highway. This line travels primarily along Lincoln Boulevard and Aviation Boulevard within the Study Area. This line runs Monday through Friday from 6:00-10:00 a.m. and 2:00-7:00 p.m. at a frequency of 15 minutes. Service is not provided on weekends and holidays. The northern terminus is at the intersection of 4th Street/Wilshire Boulevard in Santa Monica. The southern terminus is at the Metro Green Line Station at Aviation Boulevard/Imperial Highway.
- **City of Torrance Transit Line 8** is a line that runs north-south from Torrance to LAX City Bus Center. Line 8 travels along Sepulveda Boulevard and Imperial Highway within the Study Area. This line runs every day at a peak frequency of approximately 25 minutes during peak commuter hours. The northern terminus is at the LAX City Bus Center. The southern terminus is at the intersection of Hawthorne Boulevard/Pacific Coast Highway in Torrance.
- **Beach Cities Transit Line 109** is a line that runs north to south from Redondo Beach to LAX City Bus Center. Line 109 travels along Aviation Boulevard, Airport Boulevard, and Century Boulevard within the Study Area. This line runs every day, including holidays, at a peak frequency of 45 minutes during peak commuter hours. The northern terminus is at the LAX City Bus Center. The southern terminus is at the intersection of Palos Verdes Boulevard/Via Valencia in Redondo Beach.
- **The Metro Green Line** is an east-west light rail line that provides service to Norwalk, Lynwood, Willowbrook, Hawthorne, El Segundo, and Redondo Beach. A Green Line Station lies within the Study Area at Aviation Boulevard/Imperial Highway. This line runs every day, including holidays, at a peak frequency of 8 minutes during peak commuter hours. The eastern terminus is at the Norwalk Station in Norwalk. The western terminus is at the Redondo Beach Station in Redondo Beach.

4.12.2.3.3 Existing Bicycle Facilities

The City of Los Angeles 2010 Bicycle Plan and the 2035 Mobility Plan document the existing bicycle facilities. Class I Bikeways (Bike Path) provide an exclusive paved right-of-way separated from the street or highway. Class II Bikeways (Bike Lane) provide a striped and signed bike lane for one-way travel on a street or highway. Class III Bikeways (Bike Routes) provide for a shared use of the roadway with posted signage for bicycle use which can include ‘sharrow’ pavement markings.

Figure 2-54 in Chapter 2, *Description of the Proposed Project*, shows the designated bicycle facilities areas potentially affected by the proposed Project. As shown on Figure 8 of Appendix O, bicycle facilities are provided within the vicinity of LAX on the following streets:

- Pershing Drive: Westchester Parkway to Imperial Highway (Bike Lane)
- Loyola Boulevard: 80th Street to Manchester Avenue and Lincoln Boulevard to Westchester Parkway (Bike Lane)
- Lincoln Boulevard: Jefferson Boulevard to Loyola Marymount University Drive (Bike Lane)
- Bluff Creek Drive: Lincoln Boulevard to Centinela Avenue (Bike Lane)
- Sepulveda Boulevard: Centinela Avenue to Manchester Avenue (Bike Lane)
- Manchester Avenue: Lincoln Boulevard to Osage Avenue (Bike Lane)
- Westchester Parkway: Pershing Drive to Sepulveda Boulevard (Bike Lane)
- 96th Street: Sepulveda Boulevard to Airport Boulevard (Bike Lane)
- Aviation Boulevard: Century Boulevard to Imperial Highway (Bike Lane)
- 111th Street: Aviation Boulevard to La Cienega Boulevard (Bike Lane)
- Imperial Highway: Vista del Mar to Pershing Drive and Hillcrest Avenue to Aviation Boulevard (Bike Lane)
- Imperial Highway: Pershing Drive to Hillcrest Avenue (Bike Path)
- Along Dockweiler State Beach: Ballona Creek to south City limit (Bike Path)

Future planned bicycle facilities are included in the City of Los Angeles’ *Mobility Plan 2035: An Element of the General Plan* document. Figure 2-55 in Chapter 2, *Description of the Proposed Project*, shows the future planned designated bicycle facilities in the areas potentially affected by the proposed Project. Bicycle facilities are planned on the following streets within the vicinity of the Project site (not all of which are shown on Figure 2-55):

- Sepulveda Boulevard: Centinela Avenue to Manchester Avenue (Tier 1 - Protected Bike Lane)
- Lincoln Boulevard: northern City limit to Sepulveda Boulevard (Tier 2 - Bike Lane)
- La Tijera Boulevard: Sepulveda Boulevard to La Cienega Boulevard (Tier 2 – Bike Lane)

- Airport Boulevard: Manchester Avenue to Century Boulevard (Proposed Bike Lane per LADOT)
- Aviation Boulevard: Arbor Vitae Street to south City limit (Tier 1 – Protected Bike Lane), Arbor Vitae Street to Century Boulevard (Proposed Multi-Use Path per LADOT)
- Manchester Avenue: Pershing Drive to Aviation Boulevard (Tier 1 – Protected Bike Lane)
- Westchester Parkway/Arbor Vitae Street: Pershing Drive to La Cienega Boulevard (Tier 1 – Protected Bike Lane), Aviation Boulevard to La Cienega Boulevard (Proposed Multi-Use Path per LADOT)
- Imperial Highway: Vista del Mar to La Cienega Boulevard (Tier 1 – Protected Bike Lane)
- Century Boulevard: Airport Boulevard to Aviation Boulevard (Proposed Multi-Use Path)
- New 'A' Street: Westchester Parkway to 98th Street (Proposed Multi-Use Path per LADOT)

4.12.2.4 Thresholds of Significance

4.12.2.4.1 Intersections Thresholds of Significance

Each study intersection was evaluated for potential significant traffic impacts based on the significant traffic impact criteria adopted and accepted by various jurisdictions that the study intersections lie in. Intersections lying on the boundary of multiple jurisdictions were evaluated using the more conservative criteria. A description of the significant impact criteria for each jurisdiction is presented below.

City of Los Angeles

The City of Los Angeles Department of Transportation has established threshold criteria that determine if a project has a significant traffic impact at a specific signalized intersection. For intersections under the City of Los Angeles jurisdiction, a project impact is considered significant if the conditions in **Table 4.12.2-12** are met. These impact criteria represent intersection conditions with Project traffic.

Table 4.12.2-12: City of Los Angeles – Significant Impact Criteria

LEVEL OF SERVICE (LOS)	FINAL VOLUME/CAPACITY (V/C) RATIO	PROJECT-RELATED INCREASE IN V/C
C	> 0.701 – 0.800	Equal or greater than 0.040
D	> 0.801 – 0.900	Equal or greater than 0.020
E or F	> 0.901	Equal or greater than 0.010

SOURCE: Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

City of Culver City

For intersections under the City of Culver City jurisdiction, the City of Culver City has established threshold criteria for determining the significance of impacts of a project at a specific location. According to the criteria provided by the City of Culver City, a project impact is considered significant if the conditions in **Table 4.12.2-13** are met. These impact criteria represent intersection conditions with Project traffic.

Table 4.12.2-13: City of Culver City – Significant Impact Criteria

LEVEL OF SERVICE (LOS)	FINAL VOLUME/CAPACITY (V/C) RATIO	PROJECT-RELATED INCREASE IN V/C
C	> 0.700 – 0.800	Equal or greater than 0.050
D	> 0.800 – 0.900	Equal or greater than 0.040
E or F	> 0.900	Equal or greater than 0.010

SOURCE: City of Culver City, Public Works Department, Engineering Division and Community Development Department, Planning Division, *Traffic Study Criteria for the Review of Proposed Development Projects within the City of Culver City*, July 2012.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

In order to assess the potential impacts of the project at the stop-controlled intersections using the criterion above, the stop-controlled intersections were analyzed using HCM methodology to determine the LOS and ICU methodology with a reduced capacity of 1,200 vehicles per lane per hour for the stop-controlled approaches to determine the incremental increase in V/C ratio due to project traffic.

City of El Segundo

For intersections under the City of El Segundo jurisdiction, an impact is considered to be significant if the following threshold is exceeded:[13]

- 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.
- If there is increase in intersection capacity utilization (ICU) value of 0.020 or more, when the "With Project" intersection Level of Service (LOS) is at LOS E or F (ICU = 0.901 or greater).

City of Inglewood

For the City of Inglewood, an impact is considered to be significant if the following threshold is exceeded:[14]

- 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.

13 Raju Associates, Inc., *Technical Memorandum Landside Access Modernization Program (LAMP) Project EIR Assumptions and Methodology for Traffic Study* to the City of El Segundo, November 30, 2015.

14 Raju Associates, Inc., *Technical Memorandum Landside Access Modernization Program (LAMP) Project EIR Assumptions and Methodology for Traffic Study* to the City of Inglewood, October 27, 2015.

City of Manhattan Beach

For intersections under the City of Manhattan Beach jurisdiction, an impact is considered to be significant if the following threshold is exceeded:[15]

- 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.

County of Los Angeles

For intersections under the County of Los Angeles jurisdiction, the County of Los Angeles has established threshold criteria for determining the significance of impacts of a project at a specific location. According to the criteria provided by the County of Los Angeles, a project impact is considered significant if the conditions in **Table 4.12.2-14** are met.

Table 4.12.2-14: County of Los Angeles – Significant Impact Criteria

LEVEL OF SERVICE (LOS)	FINAL VOLUME/CAPACITY (V/C) RATIO	PROJECT-RELATED INCREASE IN V/C
C	> 0.71 – 0.80	Equal or greater than 0.040
D	> 0.81 – 0.90	Equal or greater than 0.020
E or F	> 0.91	Equal or greater than 0.010

SOURCE: Los Angeles County Department of Public Works, *Traffic Impact Analysis Report Guidelines*, December 2013.
PREPARED BY: Ricondo and Associates, Inc., July 2016.

City of Hawthorne

The City of Hawthorne applies the Los Angeles County criteria defined in their Traffic Impact Analysis Report Guidelines. For intersections under the City of Hawthorne jurisdiction, an impact is considered to be significant if the thresholds in **Table 4.12.2-15** are exceeded.

Table 4.12.2-15: City of Hawthorne – Significant Impact Criteria

LEVEL OF SERVICE (LOS)	FINAL VOLUME/CAPACITY (V/C) RATIO	PROJECT-RELATED INCREASE IN V/C
C	> 0.71 – 0.80	Equal or greater than 0.040
D	> 0.81 – 0.90	Equal or greater than 0.020
E or F	> 0.91	Equal or greater than 0.010

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., July 2016.

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15 Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR).

4.12.2.4.2 Caltrans Thresholds of Significance

Per consultation with Caltrans, significant impact criteria for freeway segments and ramp junctions were determined.[16] A project would have a significant impact if any of following conditions were met for either the a.m. or p.m. peak hours:

- If vehicle queues exceed the length of an on-ramp or off-ramp where there is no auxiliary lane.
- When an auxiliary lane is present, there is a significant impact when the queue exceeds the lesser of one-half the length of the auxiliary lane or 1,000 feet, which creates a speed differential between the auxiliary lane and the adjacent lane.
- If a freeway ramp terminus or ramp foremost or associated queue storage is blocked due to queuing or spillover at a surface street driveway or at an intersection.
- If any intersection or driveway on the State Highway System (SHS) is in such proximity to a proposed Project intersection or driveway that safety concerns may arise.
- If the Project-related traffic conditions cause the LOS to deteriorate to below LOS F. If a freeway segment is already at LOS F, then an increase in the demand/capacity ratio of greater than 1 percent determined by comparing the future with Project conditions to the future without Project conditions would result in a significant impact.

4.12.2.4.3 Congestion Management Program Thresholds of Significance

The guidelines set forth in the *2010 Congestion Management Program for Los Angeles County*[17] indicate that if a proposed development project adds 150 or more trips in either direction to the mainline freeway monitoring location during either the a.m. or p.m. weekday peak hour, then a CMP freeway analysis must be conducted. If a proposed project adds 50 or more peak hour trips in either the a.m. or p.m. weekday peak hour (of adjacent street traffic) to a CMP arterial intersection, then a CMP arterial intersection analysis must be conducted.

For purposes of a CMP Traffic Impact Analysis, a significant project-related impact would be identified if the CMP facility is projected to operate at LOS F (V/C > 1.00) and if project traffic causes an incremental change in the V/C ratio of 0.02 or greater. The proposed development would not be considered to have a regionally significant impact, regardless of the increase in V/C ratio, if the analyzed facility is projected to operate at LOS E or better after the addition of project traffic.

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[16] Memorandum from Moe Bhuyian, Area Traffic Engineer, Office of Traffic Engineering – South, Caltrans to DiAnna Watson, LD-IGR/CEQA Review Branch, Division of Planning & Local Assistance, Caltrans, "LAWA-LAMP Traffic Thresholds of Significance," June 8, 2016.

[17] Los Angeles County Metropolitan Transportation Authority, *2010 Congestion Management Program*, October 2010.

There is no established CMP threshold of significance regarding transit impacts; however, for the purposes of this EIR, a significant transit impact is considered to occur if implementation of the proposed Project would result in a substantial increase in transit demand compared to capacity of transit lines serving the project area.

4.12.2.5 Future Non-Project Improvements

4.12.2.5.1 Street System

The roadway network for the future conditions within the Study Area is affected by a number of regional improvement plans, local specific plans, and programmed improvements that have been planned and funded separately from the proposed Project. Specific improvements are planned for the following intersections:[18]

- Aviation Boulevard and Arbor Vitae Street
- Sepulveda Boulevard and La Tijera Boulevard
- Sepulveda Boulevard and Imperial Highway
- La Cienega Boulevard and I-405 Freeway Southbound Ramps (north of Century Boulevard)
- Airport Boulevard and Manchester Avenue

4.12.2.5.2 Public Transit Service

Metro is constructing the Metro Crenshaw/LAX Line that extends from the existing Metro Exposition Line at Crenshaw and Exposition Boulevards and travels 8.5 miles south to connect with the Metro Green Line at the Aviation/LAX Station (under construction). The Metro Crenshaw/LAX Line would also include construction of the proposed Airport Metro Connector (AMC) Station to be located at Aviation Boulevard and 96th Street. This facility would provide a multi-modal/transit facility adjacent to the proposed ITF East. The Metro Crenshaw/LAX Line is projected to be completed and commence operations by 2018/2019.

4.12.2.5.3 Bicycle Facilities

The 2035 Mobility Plan documents the planned future bicycle facilities within the City of Los Angeles. Typically bicycle facilities are implemented as part of street improvement or large development projects.

4.12.2.6 Project-Related Improvements

The roadway improvements proposed as part of the Project are designed to reduce congestion and enable passengers to more efficiently access LAX. These proposed improvements may include, among others, new roadway segments, additional lanes, realignment of segments of existing roads, restriping, freeway ramps improvements, new or realigned driveways, roadway closures, streetscape improvements, landscaping, and

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[18] City of Los Angeles, Los Angeles World Airport. *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project*, September 2009.

intersection improvements. Please see Section 2.4.4 in Chapter 2, *Description of the Proposed Project*, for more information regarding the proposed improvements to the Airport area roadways.

4.12.2.6.1 Phase 1 (2024)

As part of the proposed Project, improvements to several roadways would be implemented by year 2024. Specifically, they include (see Section 2.4.4 for details):

- West Way Relocation
- Improvements to Center Way
- Elimination of Sky Way/W. 96th Street Bridge Demolition
- New Ramps to Arrivals and Departures from Southbound Sepulveda Boulevard
- Vicksburg Avenue Demolition
- W. 96th Street Improvements
- New 'A' Street
- New Intersection at 'A' Street and W. 96th Street
- W. 96th Street Closure
- Jenny Avenue Cul-de-Sac
- Demolition of Jenny Avenue
- New 'B' Street
- New Access Roadways to ITF West
- W. 98th Street Improvements
- Airport Boulevard Improvements
- New 'D' Street
- Demolition of Belford Avenue
- W. Century Boulevard Improvements
- W. 98th Street Extension
- Aviation Boulevard Improvements
- New 98th Street Segment
- Extended Concourse Way
- Demolition of Secondary Roadways in Manchester Square
- W. 98th Street Underpass
- S. La Cienega Boulevard Improvements

- I-405 Freeway Off-Ramp Improvements
- W. Arbor Vitae Street Improvements
- New Access Roadways to ITF East
- W. 111th Street Improvements
- New 'C' Street
- I-105 Freeway Ramp Improvements

In addition to individual roadway improvements, the following intersections would undergo improvements as well (see Section 2.4.4 for details):

- Avion Drive and Century Boulevard
- Airport Boulevard and Westchester Parkway/Arbor Vitae Street
- Airport Boulevard and 96th Street
- Airport Boulevard and 98th Street
- Airport Boulevard and Century Boulevard
- Bellanca Avenue Boulevard and Century Boulevard
- Aviation Boulevard and Arbor Vitae Street
- Aviation Boulevard and Century Boulevard
- Hindry Avenue and Arbor Vitae Street
- Concourse Way and Century Boulevard
- I-105 Freeway Ramps/New 'C' Street and Imperial Highway
- La Cienega Boulevard and Arbor Vitae Street
- La Cienega Boulevard and I-405 Freeway Southbound Ramp/98th Street Extension

4.12.2.6.2 Phase 2 (2035)

Phase 2 of the proposed Project would include improvements to the following roadways (see Section 2.4.4 for details):

- S. Sepulveda Boulevard (LAX Airport Tunnel to W. 96th Street)
- Westbound W. Century Boulevard (New 'A' Street to World Way)
- Westbound W. Century Boulevard Viaduct to World Way
- Northbound S. Sepulveda Boulevard to eastbound W. Century Boulevard Ramp
- Eastbound World Way (Departures) to northbound S. Sepulveda Boulevard Ramp

- Eastbound World Way (Arrivals) to southbound S. Sepulveda Boulevard Ramp
- Eastbound World Way (Departures) to southbound S. Sepulveda Boulevard Ramp (join existing ramp)
- Eastbound World Way (Arrivals and Departures) to eastbound W. Century Boulevard and to northbound New 'A' Street
- Return road connecting World Way South and World Way North would be modified to form an intersection with Center Way to southbound S. Sepulveda Boulevard ramp. This intersection would be signalized.
- Loop ramp from southbound S. Sepulveda Boulevard to W. Century Boulevard would be removed

4.12.2.7 Impact Analysis

4.12.2.7.1 LAX Landside Access Modernization Program Project

Intersection Analysis

Existing Conditions (2015) compared to 2015 With Project

The intersection impacts for a.m., p.m., and midday peaks of the 2015 With Project scenario as compared to the Existing Conditions (2015) scenario are shown in **Table 4.12.2-16**. A summary of the number of intersections operating at each LOS is shown in **Table 4.12.2-17**.

Under the 2015 With Project scenario, significant impacts would occur at one intersection during the p.m. peak hour; at one intersection during both the a.m. and the p.m. peak hour; and at one intersection during the midday hour, as follows:

- Aviation Boulevard and Arbor Vitae Street. Significant impact in the p.m. peak hour at LOS C.
- La Cienega Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS E and in the p.m. peak hour at LOS D.
- Sepulveda Boulevard and Century Boulevard. Significant impact in the midday peak hour at LOS C.

The proposed Project would not result in significant traffic impacts at the remaining 181 of the 183 study intersections during either the a.m. or p.m. peak hour; or the remaining 35 of the 36 study intersections for the midday peak hour.

Table 4.12.2-16 (1 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	**INTERSECTION**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**a.m.**	**midday**	**p.m.**
1	Ocean Avenue/Via Marina and Washington Boulevard	0.574	A	---	---	0.675	B	0.572	A	---	---	0.676	B	---	---	---
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	0.782	C	---	---	0.653	B	0.772	C	---	---	0.640	B	---	---	---
3	Vista del Mar and Imperial Highway	0.496	A	---	---	0.493	A	0.491	A	---	---	0.481	A	---	---	---
4	Vista del Mar and Grand Avenue	0.638	B	---	---	0.478	A	0.631	B	---	---	0.470	A	---	---	---
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	0.906	E	---	---	0.774	C	0.895	D	---	---	0.760	C	---	---	---
6	Nicholson Street and Culver Boulevard	0.652	B	---	---	0.798	C	0.648	B	---	---	0.801	D	---	---	---
7	Pershing Drive and Manchester Avenue	0.409	A	---	---	0.427	A	0.411	A	---	---	0.430	A	---	---	---
8	Pershing Drive and Westchester Parkway	0.429	A	---	---	0.259	A	0.427	A	---	---	0.255	A	---	---	---
9	Pershing Drive and Imperial Highway	0.520	A	---	---	0.400	A	0.515	A	---	---	0.389	A	---	---	---
10	Culver Boulevard and Jefferson Boulevard	0.727	C	---	---	0.810	D	0.727	C	---	---	0.803	D	---	---	---
11	Main Street and Imperial Highway	0.693	B	---	---	0.608	B	0.689	B	---	---	0.610	B	---	---	---
12	Lincoln Boulevard and Venice Boulevard [1/]	0.871	D	---	---	0.840	D	0.872	D	---	---	0.839	D	---	---	---
13	Lincoln Boulevard and Washington Boulevard	0.837	D	---	---	0.783	C	0.832	D	---	---	0.784	C	---	---	---
14	Lincoln Boulevard and SR-90 Ramps [1/]	0.665	B	---	---	0.608	B	0.658	B	---	---	0.609	B	---	---	---
15	Lincoln Boulevard and Bali Way	0.509	A	---	---	0.552	A	0.513	A	---	---	0.554	A	---	---	---
16	Lincoln Boulevard and Mindanao Way	0.710	C	---	---	0.781	C	0.709	C	---	---	0.783	C	---	---	---
17	Lincoln Boulevard and Fiji Way	0.628	B	---	---	0.720	C	0.630	B	---	---	0.724	C	---	---	---
18	Lincoln Boulevard and Jefferson Boulevard	0.840	D	---	---	0.639	B	0.843	D	---	---	0.641	B	---	---	---
19	Lincoln Boulevard and Bluff Creek Drive	0.544	A	---	---	0.360	A	0.548	A	---	---	0.364	A	---	---	---
20	Lincoln Boulevard and Loyola Marymount University Drive	0.689	B	---	---	0.579	A	0.692	B	---	---	0.583	A	---	---	---
21	Lincoln Boulevard and 83rd Street	1.027	F	---	---	0.613	B	1.031	F	---	---	0.614	B	---	---	---
22	Lincoln Boulevard and Manchester Avenue [1/]	0.856	D	0.545	A	0.669	B	0.858	D	0.536	A	0.670	B	---	---	---
23	Lincoln Boulevard and La Tijera Boulevard	0.405	A	0.278	A	0.421	A	0.415	A	0.304	A	0.438	A	---	---	---
24	Centinela Avenue and Venice Boulevard [1/]	0.928	E	---	---	0.804	D	0.930	E	---	---	0.805	D	---	---	---
25	Centinela Avenue and Washington Place	0.794	C	---	---	0.875	D	0.795	C	---	---	0.876	D	---	---	---
26	Centinela Avenue and Washington Boulevard	0.804	D	---	---	0.900	D	0.805	D	---	---	0.901	E	---	---	---
27	Centinela Avenue and Culver Boulevard	0.884	D	---	---	0.991	E	0.886	D	---	---	0.992	E	---	---	---
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	0.467	A	---	---	0.447	A	0.468	A	---	---	0.447	A	---	---	---
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	0.494	A	---	---	0.424	A	0.492	A	---	---	0.424	A	---	---	---
30	Centinela Avenue and Jefferson Boulevard	0.737	C	---	---	0.685	B	0.733	C	---	---	0.683	B	---	---	---
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	0.700	B	---	---	0.632	B	0.704	C	---	---	0.636	B	---	---	---
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	0.768	C	---	---	0.827	D	0.768	C	---	---	0.828	D	---	---	---
33	Sawtelle Boulevard and Washington Place	0.573	A	---	---	0.620	B	0.573	A	---	---	0.620	B	---	---	---
34	Sawtelle Boulevard and Washington Boulevard	0.647	B	---	---	0.680	B	0.649	B	---	---	0.681	B	---	---	---

Table 4.12.2-16 (2 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
35	Sawtelle Boulevard and Culver Boulevard	0.747	C	---	---	0.862	D	0.748	C	---	---	0.863	D	---	---	---
36	I-405 Southbound Ramps and Jefferson Boulevard	0.590	A	---	---	0.528	A	0.589	A	---	---	0.528	A	---	---	---
37	I-405 Northbound Ramps and Jefferson Boulevard	0.913	E	---	---	0.770	C	0.913	E	---	---	0.773	C	---	---	---
38	Slauson Avenue and Jefferson Boulevard	0.438	A	---	---	0.445	A	0.438	A	---	---	0.445	A	---	---	---
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	0.693	B	---	---	0.899	D	0.693	B	---	---	0.899	D	---	---	---
40	Sepulveda Boulevard and Washington Place	0.839	D	---	---	0.823	D	0.841	D	---	---	0.823	D	---	---	---
41	Sepulveda Boulevard and Washington Boulevard	0.759	C	---	---	0.786	C	0.759	C	---	---	0.786	C	---	---	---
42	Sepulveda Boulevard and Culver Boulevard	0.908	E	---	---	0.867	D	0.908	E	---	---	0.868	D	---	---	---
43	Sepulveda Boulevard and Braddock Drive	0.691	B	---	---	0.675	B	0.691	B	---	---	0.676	B	---	---	---
44	Overland Avenue and Venice Boulevard 1/	0.841	D	---	---	0.819	D	0.841	D	---	---	0.819	D	---	---	---
45	Overland Avenue and Washington Boulevard	0.796	C	---	---	0.953	E	0.797	C	---	---	0.953	E	---	---	---
46	Overland Avenue and Culver Boulevard	0.983	E	---	---	0.913	E	0.984	E	---	---	0.913	E	---	---	---
47	Duquesne Avenue and Washington Boulevard	0.568	A	---	---	0.691	B	0.568	A	---	---	0.691	B	---	---	---
48	Duquesne Avenue and Culver Boulevard	0.636	B	---	---	0.657	B	0.636	B	---	---	0.657	B	---	---	---
49	Culver Boulevard and Washington Boulevard-Irving Place	0.650	B	---	---	0.641	B	0.650	B	---	---	0.641	B	---	---	---
50	Duquesne Avenue and Jefferson Boulevard	0.806	D	---	---	0.770	C	0.806	D	---	---	0.770	C	---	---	---
51	Overland Avenue and Jefferson Boulevard	0.824	D	---	---	0.830	D	0.825	D	---	---	0.830	D	---	---	---
52	Sepulveda Boulevard and Jefferson Boulevard	0.604	B	---	---	0.605	B	0.605	B	---	---	0.605	B	---	---	---
53	Sepulveda Boulevard and Sawtelle Boulevard	0.685	B	---	---	0.717	C	0.686	B	---	---	0.718	C	---	---	---
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	0.899	D	---	---	0.685	B	0.899	D	---	---	0.686	B	---	---	---
55	Sepulveda Boulevard and Slauson Avenue	0.726	C	---	---	0.610	B	0.729	C	---	---	0.613	B	---	---	---
56	Sepulveda Boulevard and Centinela Avenue	0.767	C	---	---	0.981	E	0.760	C	---	---	0.986	E	---	---	---
57	Sepulveda Boulevard and Howard Hughes Parkway	0.767	C	---	---	0.633	B	0.763	C	---	---	0.646	B	---	---	---
58	Sepulveda Boulevard and 76th Street-77th Street	0.913	E	---	---	0.567	A	0.921	E	---	---	0.559	A	---	---	---
59	Sepulveda Boulevard and 79th Street-80th Street	0.687	B	---	---	0.443	A	0.719	C	---	---	0.451	A	---	---	---
60	Sepulveda Boulevard and 83rd Street	0.537	A	---	---	0.401	A	0.552	A	---	---	0.395	A	---	---	---
61	Sepulveda Boulevard and Manchester Avenue 1/	0.715	C	0.597	A	0.808	D	0.708	C	0.587	A	0.789	C	---	---	---
62	Sepulveda Boulevard and La Tijera Boulevard	0.656	B	0.639	B	0.712	C	0.679	B	0.650	B	0.723	C	---	---	---
63	Sepulveda Boulevard and Westchester Parkway	0.735	C	0.748	C	0.784	C	0.730	C	0.751	C	0.779	C	---	---	---
64	Sepulveda Boulevard and Lincoln Boulevard 1/	0.601	B	0.478	A	0.620	B	0.613	B	0.477	A	0.621	B	---	---	---
65	Sepulveda Boulevard and Century Boulevard	0.754	C	0.594	A	0.689	B	0.787	C	0.721	C	0.665	B	---	Yes	---
66	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	1.078	F	0.921	E	0.901	E	1.035	F	0.871	D	0.871	D	---	---	---
67	Sepulveda Boulevard and Imperial Highway	0.774	C	0.684	B	1.089	F	0.719	C	0.654	B	1.056	F	---	---	---
68	Sepulveda Boulevard and Mariposa Avenue	0.748	C	---	---	0.782	C	0.746	C	---	---	0.786	C	---	---	---

Table 4.12.2-16 (3 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
69	Sepulveda Boulevard and Grand Avenue	0.820	D	---	---	0.875	D	0.822	D	---	---	0.879	D	---	---	---
70	Sepulveda Boulevard and El Segundo Boulevard [1/]	0.815	D	---	---	0.967	E	0.817	D	---	---	0.967	E	---	---	---
71	Sepulveda Boulevard and Rosecrans Avenue [1/]	0.937	E	---	---	1.001	F	0.937	E	---	---	1.003	F	---	---	---
72	SR-90 Westbound Ramps and Slauson Avenue	0.736	C	---	---	0.734	C	0.735	C	---	---	0.734	C	---	---	---
73	Buckingham Parkway and Slauson Avenue	0.806	D	---	---	0.726	C	0.803	D	---	---	0.724	C	---	---	---
74	I-405 Southbound Ramps and Howard Hughes Parkway	0.428	A	---	---	0.214	A	0.424	A	---	---	0.210	A	---	---	---
75	Sepulveda Eastway and Westchester Parkway	0.407	A	---	---	0.602	B	0.431	A	---	---	0.617	B	---	---	---
76	La Tijera Boulevard and Manchester Avenue	0.508	A	0.524	A	0.504	A	0.525	A	0.541	A	0.501	A	---	---	---
77	Jenny Avenue and Westchester Parkway	0.197	A	0.232	A	0.330	A	0.307	A	0.334	A	0.295	A	---	---	---
78	Avion Drive and Century Boulevard	0.381	A	0.320	A	0.292	A	0.343	A	0.248	A	0.228	A	---	---	---
79	La Tijera Boulevard and Airport Boulevard	0.442	A	0.349	A	0.475	A	0.472	A	0.312	A	0.529	A	---	---	---
80	Airport Boulevard and Manchester Avenue	0.573	A	0.576	A	0.699	B	0.614	B	0.526	A	0.639	B	---	---	---
81	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	0.661	B	0.587	A	0.763	C	0.630	B	0.490	A	0.668	B	---	---	---
82	Airport Boulevard and 96th Street	0.279	A	0.332	A	0.376	A	0.333	A	0.323	A	0.375	A	---	---	---
83	Airport Boulevard and 98th Street	0.374	A	0.397	A	0.467	A	0.507	A	0.603	B	0.691	B	---	---	---
84	Airport Boulevard and Century Boulevard	0.565	A	0.451	A	0.459	A	0.507	A	0.401	A	0.483	A	---	---	---
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	0.414	A	---	---	0.350	A	0.403	A	---	---	0.258	A	---	---	---
86	Nash Street and El Segundo Boulevard	0.551	A	---	---	0.579	A	0.545	A	---	---	0.560	A	---	---	---
87	Douglas Street and Imperial Highway	0.346	A	---	---	0.579	A	0.349	A	---	---	0.578	A	---	---	---
88	Douglas Street and El Segundo Boulevard	0.736	C	---	---	0.854	D	0.731	C	---	---	0.840	D	---	---	---
89	I-405 Northbound Ramps and La Tijera Boulevard	0.804	D	0.706	C	0.773	C	0.756	C	0.677	B	0.773	C	---	---	---
90	I-405 Southbound Ramps and La Tijera Boulevard	0.740	C	0.588	A	0.754	C	0.738	C	0.586	A	0.722	C	---	---	---
91	Bellanca Avenue and Century Boulevard	0.471	A	---	---	0.437	A	0.307	A	---	---	0.269	A	---	---	---
92	Aviation Boulevard/Florence Avenue and Manchester Avenue	0.697	B	0.583	A	0.629	B	0.636	B	0.550	A	0.538	A	---	---	---
93	Aviation Boulevard and Arbor Vitae Street	0.802	D	0.521	A	0.720	C	0.808	D	0.531	A	0.800	C	---	---	Yes
94	Aviation Boulevard and Century Boulevard	0.730	C	0.554	A	0.729	C	0.640	B	0.499	A	0.670	B	---	---	---
95	Aviation Boulevard and 104th Street	0.520	A	0.388	A	0.507	A	0.510	A	0.402	A	0.578	A	---	---	---
96	Aviation Boulevard and 111th Street	0.475	A	0.327	A	0.459	A	0.648	B	0.497	A	0.634	B	---	---	---
97	Aviation Boulevard and Imperial Highway	0.576	A	0.517	A	0.736	C	0.538	A	0.429	A	0.759	C	---	---	---
98	Aviation Boulevard and West 120th Street	0.856	D	---	---	0.728	C	0.834	D	---	---	0.709	C	---	---	---
99	Aviation Boulevard and El Segundo Boulevard	0.863	D	---	---	0.955	E	0.854	D	---	---	0.949	E	---	---	---
100	Aviation Boulevard and Rosecrans Avenue	0.946	E	---	---	0.920	E	0.943	E	---	---	0.916	E	---	---	---
101	Hindry Avenue and Manchester Boulevard	0.640	B	---	---	0.593	A	0.658	B	---	---	0.567	A	---	---	---
102	Hindry Avenue and Arbor Vitae Street [2/]	0.000	C	14.6 s	B	0.000	B	0.517	A	0.300	A	0.398	A	---	---	---

Table 4.12.2-16 (4 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
103	Concourse Way and Century Boulevard	0.249	A	---	---	0.323	A	0.611	B	---	---	0.536	A	---	---	---
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	0.622	B	0.275	A	0.531	A	0.569	A	0.338	A	0.560	A	---	---	---
105	La Tijera Boulevard and Centinela Avenue	0.794	C	---	---	0.749	C	0.777	C	---	---	0.740	C	---	---	---
106	Jefferson Boulevard and National Boulevard	0.824	D	---	---	0.620	B	0.824	D	---	---	0.618	B	---	---	---
107	Jefferson Boulevard and Higuera Street/Rodeo Road	0.586	A	---	---	0.629	B	0.586	A	---	---	0.626	B	---	---	---
108	La Cienega Boulevard and Jefferson Boulevard [1/]	0.912	E	---	---	0.931	E	0.915	E	---	---	0.931	E	---	---	---
109	La Cienega Boulevard and Rodeo Road	1.163	F	---	---	1.061	F	1.161	F	---	---	1.061	F	---	---	---
110	La Cienega Boulevard and Stocker Street [1/]	1.080	F	---	---	1.089	F	1.076	F	---	---	1.088	F	---	---	---
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	1.197	F	---	---	1.072	F	1.193	F	---	---	1.065	F	---	---	---
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	1.043	F	---	---	0.855	D	1.039	F	---	---	0.849	D	---	---	---
113	La Cienega Boulevard and La Tijera Boulevard	0.603	B	---	---	0.646	B	0.605	B	---	---	0.650	B	---	---	---
114	La Cienega Boulevard and Centinela Avenue [1/]	0.930	E	---	---	1.040	F	0.923	E	---	---	1.029	F	---	---	---
115	La Cienega Boulevard and Florence Avenue	0.715	C	0.722	C	0.952	E	0.726	C	0.752	C	0.988	E	---	---	---
116	La Cienega Boulevard and Manchester Boulevard	0.705	C	0.672	B	0.718	C	0.711	C	0.773	C	0.780	C	---	---	---
117	La Cienega Boulevard and Arbor Vitae Street	0.740	C	0.562	A	0.711	C	0.920	E	0.667	B	0.779	C	---	---	---
118	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Bl)	0.742	C	0.494	A	0.610	B	0.676	B	0.528	A	0.482	A	---	---	---
119	La Cienega Boulevard and Century Boulevard	0.891	D	0.511	A	0.823	D	0.925	E	0.542	A	0.864	D	Yes	---	Yes
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Bl)	0.352	A	---	---	0.267	A	0.306	A	---	---	0.284	A	---	---	---
121	La Cienega Boulevard and 104th Street	0.309	A	---	---	0.300	A	0.322	A	---	---	0.301	A	---	---	---
122	La Cienega Boulevard and Lennox Boulevard	0.447	A	---	---	0.576	A	0.467	A	---	---	0.597	A	---	---	---
123	La Cienega Boulevard and 111th Street	0.276	A	---	---	0.233	A	0.301	A	---	---	0.210	A	---	---	---
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Hwy)	0.442	A	---	---	0.275	A	0.431	A	---	---	0.282	A	---	---	---
125	La Cienega Boulevard and Imperial Highway	0.406	A	0.176	A	0.648	B	0.405	A	0.169	A	0.654	B	---	---	---
126	La Cienega Boulevard and West 120th Street	0.644	B	---	---	0.841	D	0.639	B	---	---	0.841	D	---	---	---
127	La Cienega Boulevard and El Segundo Boulevard	0.616	B	---	---	0.814	D	0.622	B	---	---	0.818	D	---	---	---
128	Hindry Avenue and Rosecrans Avenue	0.649	B	---	---	0.716	C	0.644	B	---	---	0.705	C	---	---	---
129	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	0.842	D	0.655	B	0.707	C	0.820	D	0.638	B	0.674	B	---	---	---
130	I-405 Northbound Ramps and Century Boulevard	0.879	D	0.584	A	0.715	C	0.916	E	0.597	A	0.724	C	---	---	---
131	I-405 Northbound Ramps (e/o La Cienega Bl) and Imperial Highway	0.618	B	---	---	0.852	D	0.635	B	---	---	0.846	D	---	---	---
132	I-405 Northbound Ramps and El Segundo Boulevard	0.705	C	---	---	0.726	C	0.709	C	---	---	0.727	C	---	---	---
133	I-405 Northbound Ramps and Rosecrans Avenue	0.882	D	---	---	0.834	D	0.885	D	---	---	0.825	D	---	---	---
134	Inglewood Avenue and Manchester Boulevard	0.731	C	---	---	0.740	C	0.723	C	---	---	0.734	C	---	---	---
135	Inglewood Avenue and Arbor Vitae Street	0.642	B	---	---	0.703	C	0.640	B	---	---	0.668	B	---	---	---
136	Inglewood Avenue and Century Boulevard	0.784	C	---	---	0.877	D	0.801	D	---	---	0.895	D	---	---	---

Table 4.12.2-16 (5 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
137	Inglewood Avenue and Lennox Boulevard	0.828	D	---	---	0.915	E	0.820	D	---	---	0.913	E	---	---	---
138	Inglewood Avenue and Imperial Highway	0.945	E	---	---	1.021	F	0.948	E	---	---	1.024	F	---	---	---
139	Inglewood Avenue and El Segundo Boulevard	0.776	C	---	---	0.900	D	0.780	C	---	---	0.903	E	---	---	---
140	Inglewood Avenue and Rosecrans Avenue	0.826	D	---	---	0.983	E	0.825	D	---	---	0.982	E	---	---	---
141	La Brea Avenue/Overhill Drive and Stocker Street	0.872	D	---	---	0.987	E	0.868	D	---	---	0.983	E	---	---	---
142	La Brea Avenue and Slauson Avenue	0.777	C	---	---	0.877	D	0.773	C	---	---	0.872	D	---	---	---
143	La Brea Avenue and Centinela Avenue	0.896	D	---	---	0.940	E	0.893	D	---	---	0.931	E	---	---	---
144	La Brea Avenue and Florence Avenue	0.813	D	---	---	0.857	D	0.790	C	---	---	0.840	D	---	---	---
145	La Brea Avenue and Manchester Boulevard 1/	0.792	C	---	---	0.746	C	0.789	C	---	---	0.749	C	---	---	---
146	La Brea Avenue and Arbor Vitae Street	0.553	A	---	---	0.690	B	0.552	A	---	---	0.691	B	---	---	---
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	0.757	C	---	---	0.778	C	0.782	C	---	---	0.779	C	---	---	---
148	Hawthorne Boulevard and Lennox Boulevard	0.689	B	---	---	0.761	C	0.678	B	---	---	0.751	C	---	---	---
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	0.843	D	---	---	0.982	E	0.850	D	---	---	0.973	E	---	---	---
150	Hawthorne Boulevard and Imperial Avenue	0.697	B	---	---	0.851	D	0.686	B	---	---	0.851	D	---	---	---
151	Hawthorne Boulevard and 120th Street	0.570	A	---	---	0.711	C	0.568	A	---	---	0.715	C	---	---	---
152	Hawthorne Boulevard and El Segundo Boulevard	0.644	B	---	---	0.765	C	0.648	B	---	---	0.769	C	---	---	---
153	Hawthorne Boulevard and Rosecrans Avenue	0.667	B	---	---	0.817	D	0.667	B	---	---	0.814	D	---	---	---
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	0.652	B	---	---	0.770	C	0.644	B	---	---	0.727	C	---	---	---
155	Prairie Avenue and Manchester Boulevard	0.908	E	---	---	0.909	E	0.901	E	---	---	0.902	E	---	---	---
156	Prairie Avenue and Arbor Vitae Street	0.614	B	---	---	0.641	B	0.618	B	---	---	0.644	B	---	---	---
157	Prairie Avenue and Century Boulevard	0.816	D	---	---	0.837	D	0.814	D	---	---	0.834	D	---	---	---
158	Prairie Avenue and Lennox Boulevard	0.593	A	---	---	0.586	A	0.589	A	---	---	0.583	A	---	---	---
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	0.703	C	---	---	0.697	B	0.705	C	---	---	0.714	C	---	---	---
160	Prairie Avenue and Imperial Highway	1.194	F	---	---	0.812	D	1.190	F	---	---	0.815	D	---	---	---
161	Prairie Avenue and El Segundo Boulevard	0.850	D	---	---	0.854	D	0.850	D	---	---	0.853	D	---	---	---
162	Crenshaw Boulevard and Manchester Avenue 1/	0.946	E	---	---	0.992	E	0.942	E	---	---	0.993	E	---	---	---
163	Crenshaw Boulevard and Century Boulevard	0.770	C	---	---	0.856	D	0.762	C	---	---	0.852	D	---	---	---
164	Crenshaw Boulevard and Imperial Highway	0.773	C	---	---	0.851	D	0.775	C	---	---	0.847	D	---	---	---
165	Western Avenue and Manchester Avenue	0.802	D	---	---	0.833	D	0.800	C	---	---	0.834	D	---	---	---
166	Western Avenue and Imperial Highway	0.818	D	---	---	0.798	C	0.820	D	---	---	0.795	C	---	---	---
167	I-405 Northbound Ramps and Culver Boulevard	0.741	C	---	---	0.663	B	0.741	C	---	---	0.663	B	---	---	---
168	Walgrove Avenue and Washington Boulevard 2/	***	F	---	---	***	F	***	F	---	---	***	F	---	---	---
169	Washington Boulevard and Washington Place at Wade Street	0.688	B	---	---	0.866	D	0.693	B	---	---	0.866	D	---	---	---
170	Inglewood Boulevard and Washington Boulevard	0.784	C	---	---	0.940	E	0.785	C	---	---	0.941	E	---	---	---

Table 4.12.2-16 (6 of 6): Intersection Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE						2015 WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Bl)	0.408	A	---	---	0.477	A	0.410	A	---	---	0.477	A	---	---	---
172	Washington Boulevard and Washington Place at Tilden Avenue	0.556	A	---	---	0.621	B	0.556	A	---	---	0.621	B	---	---	---
173	Overland Avenue and Sawtelle Boulevard [2/]	35.2s	E	---	---	49.5s	E	34.9s	D	---	---	49.5s	E	---	---	---
174	Canfield Avenue-Washington Boulevard (Ince Bl) and Culver Boulevard	0.691	B	---	---	0.617	B	0.691	B	---	---	0.617	B	---	---	---
175	Ince Boulevard and Washington Boulevard	0.849	D	---	---	0.805	D	0.849	D	---	---	0.805	D	---	---	---
176	National Boulevard and Venice Boulevard	0.699	B	---	---	0.783	C	0.700	B	---	---	0.783	C	---	---	---
177	National Boulevard and Washington Boulevard	0.666	B	---	---	0.808	D	0.666	B	---	---	0.808	D	---	---	---
178	La Cienega Boulevard and Washington Boulevard	0.872	D	---	---	0.882	D	0.872	D	---	---	0.882	D	---	---	---
179	Centinela Avenue and Florence Avenue	0.866	D	---	---	0.745	C	0.863	D	---	---	0.742	C	---	---	---
180	Prairie Avenue and Florence Avenue	0.776	C	---	---	0.798	C	0.770	C	---	---	0.801	D	---	---	---
181	Van Ness Avenue and Manchester Avenue	0.916	E	---	---	0.914	E	0.917	E	---	---	0.913	E	---	---	---
182	Van Ness Avenue and Century Boulevard	0.638	B	---	---	0.649	B	0.638	B	---	---	0.647	B	---	---	---
183	Van Ness Avenue and Imperial Highway	0.788	C	---	---	0.806	D	0.788	C	---	---	0.805	D	---	---	---

NOTES:

--- = not available

*** indicates over-saturated conditions

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-17: Intersection Level of Service Analysis – 2015 With Project

LEVEL OF SERVICE	AM PEAK HOUR	MIDDAY PEAK HOUR	PM PEAK HOUR
A	44	25	41
B	40	6	39
C	41	4	36
D	34	1	38
E	16	0	21
F	8	0	8
Total	183	36 1/	183
Total Number of Impacts	1	1	2
Total Individual Intersection Impacts		3	

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

With the proposed Project components, the system-wide operations within the Study Area would remain largely unchanged during peak hours. During the evening peak hour, it is worth noting that intersection operations at 28 of the 55 locations (51 percent) within the area of influence[19] were improved compared to existing year 2015 baseline conditions. Significantly impacted and improved intersections for the 2015 With Project scenario for the morning and evening peak hours are shown on **Figure 4.12.2-2** and **Figure 4.12.2-3**, respectively.

[19] The area of influence was identified using the differences in traffic patterns due to the proposed Project that included redistribution of trips from the CTA to the ITF East and ITF West, consolidation of trips from the various rental car agencies that are currently spread out around the Airport, to the CONRAC and the effect of roadway improvements that offer additional and improved routes in the vicinity of LAX and its facilities. The area of influence includes all locations in the vicinity of the proposed Project, generally bound by Sepulveda Boulevard to the West; Manchester Boulevard to the north; La Brea Avenue/Hawthorne Boulevard to the east; and Imperial Highway to the south. 55 intersections were analyzed within this area of influence.

[Draft]

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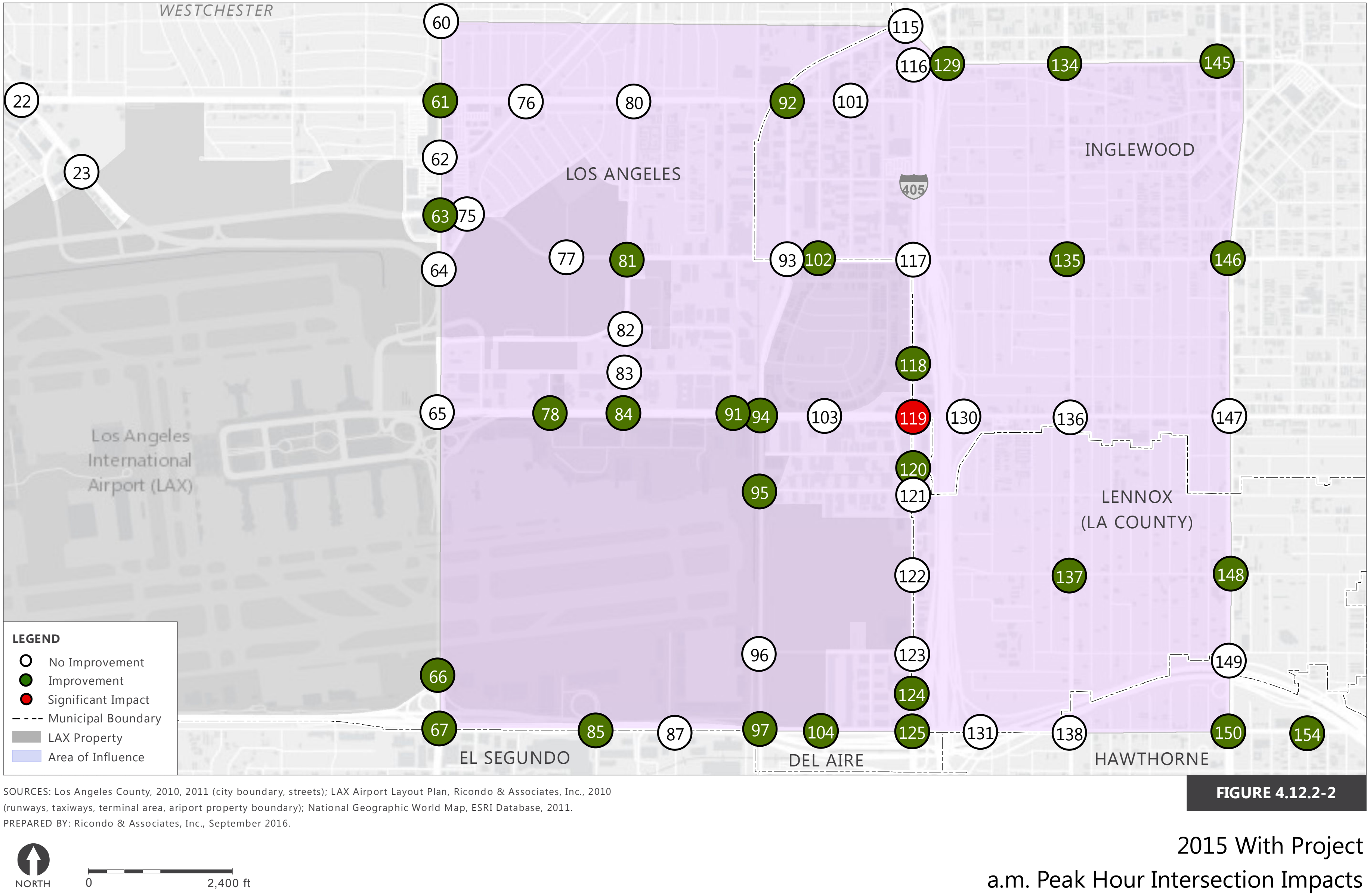

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.12.2-2

2015 With Project
a.m. Peak Hour Intersection Impacts

[Draft]

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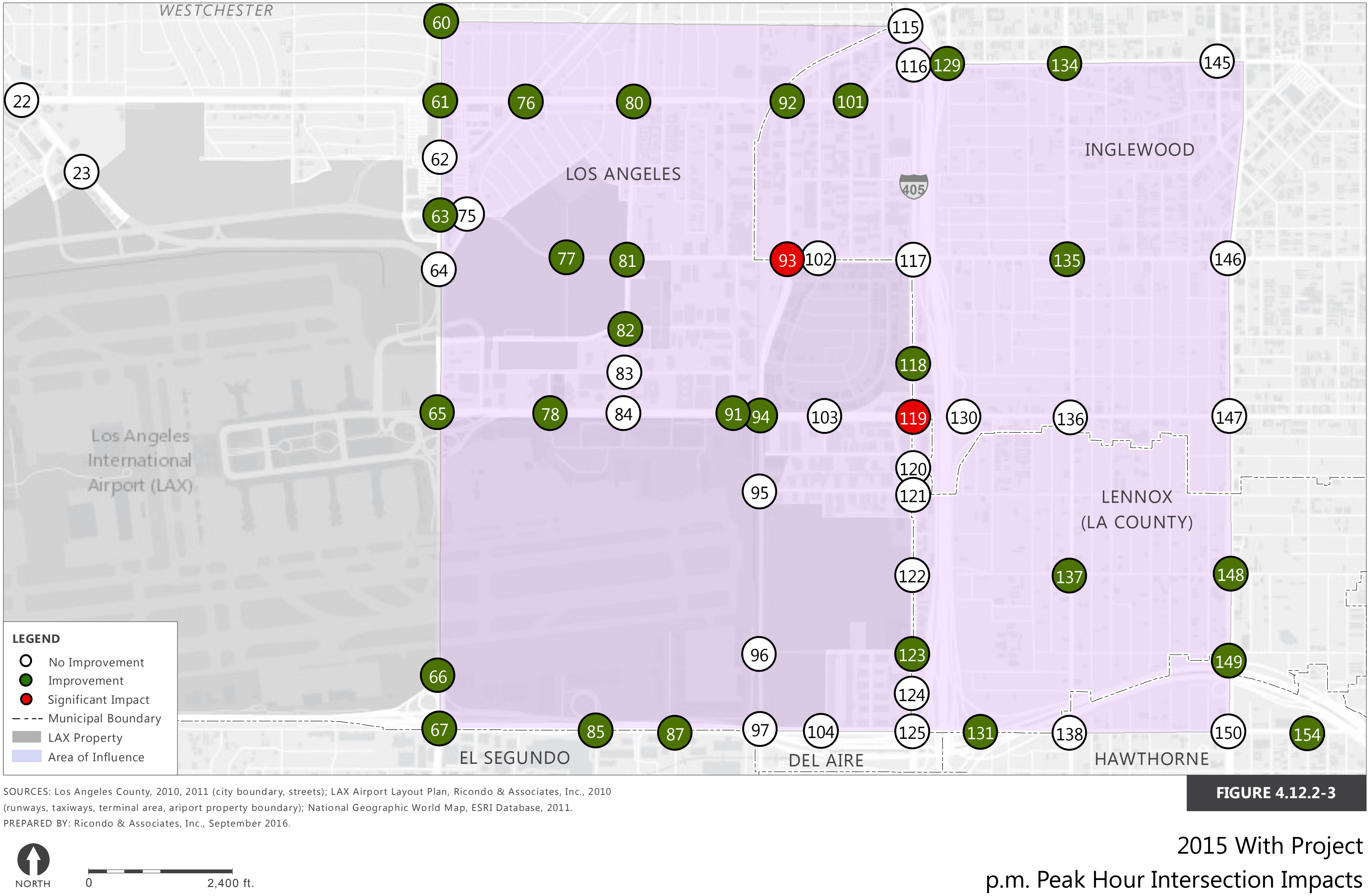

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.12.2-3

2015 With Project
p.m. Peak Hour Intersection Impacts

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[Draft]

2024 Future Without Project Compared to 2024 Future With Project

The intersection impacts for a.m., p.m., and midday peaks of the 2024 Future With Project scenario as compared to the 2024 Future Without Project scenario are shown in **Table 4.12.2-18**. A summary of the number of intersections operating at each LOS is shown in **Table 4.12.2-19**.

Under the 2024 Future With Project scenario, significant (and cumulatively considerable) impacts would occur at one intersection during the a.m. peak hour; at four intersections during the p.m. peak hour; and at one intersection during both the a.m. and p.m. peak hour, as follows:

- Airport Boulevard and Century Boulevard. Significant impact in the p.m. peak hour at LOS D
- Aviation Boulevard and Arbor Vitae Street. Significant impact in the p.m. peak hour at LOS D
- La Cienega Boulevard and Florence Avenue. Significant impact in the p.m. peak hour at LOS F
- La Cienega Boulevard and Arbor Vitae Street. Significant impact in the a.m. peak hour at LOS F
- La Cienega Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS E and in the p.m. peak hour at LOS F
- Inglewood Avenue and Century Boulevard. Significant impact in the p.m. peak hour at LOS F

Two intersections would be significantly impacted during the mid-day peak hour, as follows:

- Airport Boulevard and Century Boulevard. Significant impact in MD Peak Hour at LOS D
- Aviation Boulevard and Arbor Vitae Street. Significant impact in MD Peak Hour at LOS C

The proposed Project would not result in significant traffic impacts at the remaining 177 of the 183 study intersections during either the a.m. or p.m. peak hour, or the remaining 34 of the 36 study intersections for the midday peak hour.

The intersection analysis shows that the system-wide operations within the Study Area during the morning and evening peak hours did not change appreciably compared to the Without Project conditions. During the evening peak hour, it is worth noting that intersection operations at 43 of the 55 locations (78 percent) within the area of influence were improved compared to the 2024 Future Without Project conditions. Significantly impacted and improved intersections for the 2024 Future With Project scenario for the morning and evening peak hours are shown on **Figure 4.12.2-4** and **Figure 4.12.2-5**, respectively.

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Table 4.12.2-18 (1 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
1	Ocean Avenue/Via Marina and Washington Boulevard	0.649	B	---	---	0.831	D	0.647	B	---	---	0.827	D	---	---	---
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	0.822	D	---	---	0.750	C	0.813	D	---	---	0.736	C	---	---	---
3	Vista del Mar and Imperial Highway	0.539	A	---	---	0.543	A	0.528	A	---	---	0.534	A	---	---	---
4	Vista del Mar and Grand Avenue	0.689	B	---	---	0.548	A	0.682	B	---	---	0.540	A	---	---	---
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	0.956	E	---	---	0.890	D	0.949	E	---	---	0.876	D	---	---	---
6	Nicholson Street and Culver Boulevard	0.734	C	---	---	0.863	D	0.726	C	---	---	0.856	D	---	---	---
7	Pershing Drive and Manchester Avenue	0.453	A	---	---	0.497	A	0.449	A	---	---	0.498	A	---	---	---
8	Pershing Drive and Westchester Parkway	0.459	A	---	---	0.313	A	0.456	A	---	---	0.306	A	---	---	---
9	Pershing Drive and Imperial Highway	0.528	A	---	---	0.460	A	0.520	A	---	---	0.444	A	---	---	---
10	Culver Boulevard and Jefferson Boulevard	0.763	C	---	---	0.895	D	0.761	C	---	---	0.885	D	---	---	---
11	Main Street and Imperial Highway	0.685	B	---	---	0.619	B	0.686	B	---	---	0.624	B	---	---	---
12	Lincoln Boulevard and Venice Boulevard [1/]	0.931	E	---	---	0.915	E	0.934	E	---	---	0.911	E	---	---	---
13	Lincoln Boulevard and Washington Boulevard	0.915	E	---	---	0.863	D	0.914	E	---	---	0.864	D	---	---	---
14	Lincoln Boulevard and SR-90 Ramps [1/]	0.666	B	---	---	0.667	B	0.669	B	---	---	0.664	B	---	---	---
15	Lincoln Boulevard and Bali Way	0.578	A	---	---	0.619	B	0.578	A	---	---	0.620	B	---	---	---
16	Lincoln Boulevard and Mindanao Way	0.773	C	---	---	0.849	D	0.775	C	---	---	0.857	D	---	---	---
17	Lincoln Boulevard and Fiji Way	0.672	B	---	---	0.791	C	0.671	B	---	---	0.800	D	---	---	---
18	Lincoln Boulevard and Jefferson Boulevard	0.838	D	---	---	0.700	B	0.839	D	---	---	0.699	B	---	---	---
19	Lincoln Boulevard and Bluff Creek Drive	0.636	B	---	---	0.517	A	0.639	B	---	---	0.520	A	---	---	---
20	Lincoln Boulevard and Loyola Marymount University Drive	0.722	C	---	---	0.646	B	0.728	C	---	---	0.662	B	---	---	---
21	Lincoln Boulevard and 83rd Street	1.043	F	---	---	0.742	C	1.049	F	---	---	0.748	C	---	---	---
22	Lincoln Boulevard and Manchester Avenue [1/]	0.859	D	0.667	B	0.781	C	0.866	D	0.648	A	0.777	C	---	---	---
23	Lincoln Boulevard and La Tijera Boulevard	0.414	A	0.363	A	0.429	A	0.427	A	0.357	A	0.468	A	---	---	---
24	Centinela Avenue and Venice Boulevard [1/]	0.961	E	---	---	0.891	D	0.961	E	---	---	0.891	D	---	---	---
25	Centinela Avenue and Washington Place	0.835	D	---	---	0.957	E	0.836	D	---	---	0.957	E	---	---	---
26	Centinela Avenue and Washington Boulevard	0.888	D	---	---	0.989	E	0.889	D	---	---	0.990	E	---	---	---
27	Centinela Avenue and Culver Boulevard	0.955	E	---	---	1.080	F	0.956	E	---	---	1.081	F	---	---	---
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	0.552	A	---	---	0.501	A	0.553	A	---	---	0.501	A	---	---	---
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	0.695	B	---	---	0.487	A	0.691	B	---	---	0.490	A	---	---	---
30	Centinela Avenue and Jefferson Boulevard	0.930	E	---	---	0.791	C	0.928	E	---	---	0.774	C	---	---	---
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	0.788	C	---	---	0.819	D	0.791	C	---	---	0.826	D	---	---	---
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	0.860	D	---	---	0.940	E	0.861	D	---	---	0.940	E	---	---	---
33	Sawtelle Boulevard and Washington Place	0.615	B	---	---	0.688	B	0.618	B	---	---	0.691	B	---	---	---

Table 4.12.2-18 (2 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
34	Sawtelle Boulevard and Washington Boulevard	0.683	B	---	---	0.773	C	0.683	B	---	---	0.773	C	---	---	---
35	Sawtelle Boulevard and Culver Boulevard	0.774	C	---	---	0.938	E	0.776	C	---	---	0.939	E	---	---	---
36	I-405 Southbound Ramps and Jefferson Boulevard	0.674	B	---	---	0.583	A	0.671	B	---	---	0.582	A	---	---	---
37	I-405 Northbound Ramps and Jefferson Boulevard	0.968	E	---	---	0.786	C	0.969	E	---	---	0.788	C	---	---	---
38	Slauson Avenue and Jefferson Boulevard	0.477	A	---	---	0.509	A	0.478	A	---	---	0.509	A	---	---	---
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	0.755	C	---	---	0.981	E	0.755	C	---	---	0.981	E	---	---	---
40	Sepulveda Boulevard and Washington Place	0.899	D	---	---	0.882	D	0.900	D	---	---	0.882	D	---	---	---
41	Sepulveda Boulevard and Washington Boulevard	0.803	D	---	---	0.850	D	0.803	D	---	---	0.851	D	---	---	---
42	Sepulveda Boulevard and Culver Boulevard	0.932	E	---	---	0.914	E	0.933	E	---	---	0.914	E	---	---	---
43	Sepulveda Boulevard and Braddock Drive	0.705	C	---	---	0.715	C	0.706	C	---	---	0.715	C	---	---	---
44	Overland Avenue and Venice Boulevard [1/]	0.885	D	---	---	0.923	E	0.885	D	---	---	0.923	E	---	---	---
45	Overland Avenue and Washington Boulevard	0.871	D	---	---	1.056	F	0.872	D	---	---	1.056	F	---	---	---
46	Overland Avenue and Culver Boulevard	1.002	F	---	---	0.954	E	1.003	F	---	---	0.955	E	---	---	---
47	Duquesne Avenue and Washington Boulevard	0.606	B	---	---	0.722	C	0.606	B	---	---	0.723	C	---	---	---
48	Duquesne Avenue and Culver Boulevard	0.675	B	---	---	0.710	C	0.675	B	---	---	0.710	C	---	---	---
49	Culver Boulevard and Washington Boulevard-Irving Place	0.700	B	---	---	0.722	C	0.700	B	---	---	0.722	C	---	---	---
50	Duquesne Avenue and Jefferson Boulevard	0.859	D	---	---	0.824	D	0.859	D	---	---	0.824	D	---	---	---
51	Overland Avenue and Jefferson Boulevard	0.828	D	---	---	0.893	D	0.830	D	---	---	0.894	D	---	---	---
52	Sepulveda Boulevard and Jefferson Boulevard	0.612	B	---	---	0.635	B	0.613	B	---	---	0.635	B	---	---	---
53	Sepulveda Boulevard and Sawtelle Boulevard	0.688	B	---	---	0.784	C	0.689	B	---	---	0.785	C	---	---	---
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	0.902	E	---	---	0.777	C	0.904	E	---	---	0.777	C	---	---	---
55	Sepulveda Boulevard and Slauson Avenue	0.719	C	---	---	0.713	C	0.721	C	---	---	0.714	C	---	---	---
56	Sepulveda Boulevard and Centinela Avenue	0.845	D	---	---	1.074	F	0.842	D	---	---	1.082	F	---	---	---
57	Sepulveda Boulevard and Howard Hughes Parkway	0.811	D	---	---	0.687	B	0.807	D	---	---	0.697	B	---	---	---
58	Sepulveda Boulevard and 76th Street-77th Street	0.819	D	---	---	0.647	B	0.837	D	---	---	0.649	B	---	---	---
59	Sepulveda Boulevard and 79th Street-80th Street	0.707	C	---	---	0.529	A	0.744	C	---	---	0.539	A	---	---	---
60	Sepulveda Boulevard and 83rd Street	0.572	A	---	---	0.504	A	0.583	A	---	---	0.512	A	---	---	---
61	Sepulveda Boulevard and Manchester Avenue [1/]	0.736	C	0.697	B	0.917	E	0.733	C	0.683	A	0.901	E	---	---	---
62	Sepulveda Boulevard and La Tijera Boulevard	0.579	A	0.613	B	0.677	B	0.593	A	0.611	B	0.696	B	---	---	---
63	Sepulveda Boulevard and Westchester Parkway	0.768	C	0.910	E	0.914	E	0.799	C	0.892	C	0.880	D	---	---	---
64	Sepulveda Boulevard and Lincoln Boulevard [1/]	0.645	B	0.609	B	0.692	B	0.659	B	0.597	A	0.688	B	---	---	---
65	Sepulveda Boulevard and Century Boulevard	0.789	C	0.643	B	0.834	D	0.729	C	0.603	C	0.793	C	---	---	---
66	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	1.085	F	1.002	F	0.973	E	1.044	F	0.955	D	0.935	E	---	---	---
67	Sepulveda Boulevard and Imperial Highway	0.769	C	0.632	B	0.910	E	0.712	C	0.632	B	0.849	D	---	---	---

Table 4.12.2-18 (3 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
68	Sepulveda Boulevard and Mariposa Avenue	0.886	D	---	---	0.835	D	0.882	D	---	---	0.835	D	---	---	---
69	Sepulveda Boulevard and Grand Avenue	1.146	F	---	---	0.983	E	1.144	F	---	---	0.989	E	---	---	---
70	Sepulveda Boulevard and El Segundo Boulevard 1/	0.840	D	---	---	1.036	F	0.844	D	---	---	1.033	F	---	---	---
71	Sepulveda Boulevard and Rosecrans Avenue 1/	1.046	F	---	---	1.055	F	1.044	F	---	---	1.052	F	---	---	---
72	SR-90 Westbound Ramps and Slauson Avenue	0.769	C	---	---	0.791	C	0.768	C	---	---	0.792	C	---	---	---
73	Buckingham Parkway and Slauson Avenue	0.846	D	---	---	0.808	D	0.844	D	---	---	0.805	D	---	---	---
74	I-405 Southbound Ramps and Howard Hughes Parkway	0.444	A	---	---	0.231	A	0.442	A	---	---	0.224	A	---	---	---
75	Sepulveda Eastway and Westchester Parkway	0.450	A	---	---	0.727	C	0.472	A	---	---	0.723	C	---	---	---
76	La Tijera Boulevard and Manchester Avenue	0.562	A	0.612	B	0.624	B	0.579	A	0.623	A	0.600	A	---	---	---
77	Jenny Avenue and Westchester Parkway	0.208	A	0.295	A	0.432	A	0.336	A	0.346	A	0.388	A	---	---	---
78	Avion Drive and Century Boulevard	0.436	A	0.445	A	0.555	A	0.439	A	0.379	A	0.512	A	---	---	---
79	La Tijera Boulevard and Airport Boulevard	0.522	A	0.550	A	0.658	B	0.560	A	0.524	A	0.647	B	---	---	---
80	Airport Boulevard and Manchester Avenue	0.607	B	0.688	B	0.750	C	0.640	B	0.613	---	0.683	B	---	---	---
81	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	0.696	B	0.787	C	1.032	F	0.669	B	0.549	---	0.834	D	---	---	---
82	Airport Boulevard and 96th Street	0.311	A	0.483	A	0.504	A	0.496	A	0.624	---	0.680	B	---	---	---
83	Airport Boulevard and 98th Street	0.392	A	0.523	A	0.561	A	0.633	B	0.693	---	0.692	B	---	---	---
84	Airport Boulevard and Century Boulevard	0.611	B	0.691	B	0.660	B	0.665	B	0.829	---	0.885	D	---	Yes	Yes
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	0.521	A	---	---	0.446	A	0.520	A	---	---	0.410	A	---	---	---
86	Nash Street and El Segundo Boulevard	0.635	B	---	---	0.694	B	0.631	B	---	---	0.679	B	---	---	---
87	Douglas Street and Imperial Highway	0.369	A	---	---	0.706	C	0.403	A	---	---	0.699	B	---	---	---
88	Douglas Street and El Segundo Boulevard	0.830	D	---	---	0.967	E	0.826	D	---	---	0.963	E	---	---	---
89	I-405 Northbound Ramps and La Tijera Boulevard	0.877	D	0.833	D	0.842	D	0.813	D	0.773	---	0.787	C	---	---	---
90	I-405 Southbound Ramps and La Tijera Boulevard	0.777	C	0.609	B	0.906	E	0.774	C	0.604	---	0.819	D	---	---	---
91	Bellanca Avenue and Century Boulevard	0.613	B	---	---	0.688	B	0.381	A	---	---	0.493	A	---	---	---
92	Aviation Boulevard/Florence Avenue and Manchester Avenue	0.749	C	0.755	C	0.814	D	0.673	B	0.689	---	0.663	B	---	---	---
93	Aviation Boulevard and Arbor Vitae Street	0.912	E	0.638	B	0.792	C	0.896	D	0.772	---	0.894	D	---	Yes	Yes
94	Aviation Boulevard and Century Boulevard	0.863	D	0.838	D	1.013	F	0.750	C	0.777	---	0.865	D	---	---	---
95	Aviation Boulevard and 104th Street	0.640	B	0.640	B	0.784	C	0.620	B	0.671	---	0.741	C	---	---	---
96	Aviation Boulevard and 111th Street	0.739	C	0.696	B	0.731	C	0.727	C	0.716	---	0.757	C	---	---	---
97	Aviation Boulevard and Imperial Highway	0.724	C	0.667	B	0.865	D	0.602	B	0.622	---	0.867	D	---	---	---
98	Aviation Boulevard and West 120th Street	0.821	D	---	---	0.920	E	0.814	D	---	---	0.918	E	---	---	---
99	Aviation Boulevard and El Segundo Boulevard	0.971	E	---	---	1.063	F	0.969	E	---	---	1.060	F	---	---	---
100	Aviation Boulevard and Rosecrans Avenue	1.001	F	---	---	0.995	E	0.998	E	---	---	0.992	E	---	---	---
101	Hindry Avenue and Manchester Boulevard	0.722	C	---	---	0.790	C	0.710	C	---	---	0.663	B	---	---	---

Table 4.12.2-18 (4 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
102	Hindry Avenue and Arbor Vitae Street [2/]	23.4s	C	14.7 s	B	18.0s	C	0.563	A	0.351	---	0.514	A	---	---	---
103	Concourse Way and Century Boulevard	0.306	A	---	---	0.466	A	0.637	B	---	---	0.617	B	---	---	---
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	0.781	C	0.412	A	0.679	B	0.768	C	0.549	---	0.689	B	---	---	---
105	La Tijera Boulevard and Centinela Avenue	0.857	D	---	---	0.917	E	0.845	D	---	---	0.888	D	---	---	---
106	Jefferson Boulevard and National Boulevard	0.990	E	---	---	0.872	D	0.988	E	---	---	0.868	D	---	---	---
107	Jefferson Boulevard and Higuera Street/Rodeo Road	0.694	B	---	---	0.763	C	0.692	B	---	---	0.761	C	---	---	---
108	La Cienega Boulevard and Jefferson Boulevard [1/]	0.967	E	---	---	1.016	F	0.964	E	---	---	1.018	F	---	---	---
109	La Cienega Boulevard and Rodeo Road	1.248	F	---	---	1.153	F	1.245	F	---	---	1.152	F	---	---	---
110	La Cienega Boulevard and Stocker Street [1/]	1.138	F	---	---	1.182	F	1.136	F	---	---	1.178	F	---	---	---
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	1.245	F	---	---	1.154	F	1.241	F	---	---	1.154	F	---	---	---
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	1.091	F	---	---	0.986	E	1.092	F	---	---	0.985	E	---	---	---
113	La Cienega Boulevard and La Tijera Boulevard	0.611	B	---	---	0.720	C	0.609	B	---	---	0.714	C	---	---	---
114	La Cienega Boulevard and Centinela Avenue [1/]	0.970	E	---	---	1.115	F	0.962	E	---	---	1.104	F	---	---	---
115	La Cienega Boulevard and Florence Avenue	0.769	C	0.956	E	1.125	F	0.796	C	0.965	---	1.157	F	---	---	Yes
116	La Cienega Boulevard and Manchester Boulevard	0.749	C	0.859	D	0.838	D	0.819	D	0.957	---	0.959	E	---	---	---
117	La Cienega Boulevard and Arbor Vitae Street	0.813	D	0.667	B	0.806	D	1.015	F	0.758	---	0.954	E	Yes	---	---
118	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Bl)	0.783	C	0.653	B	0.642	B	0.665	B	0.544	---	0.547	A	---	---	---
119	La Cienega Boulevard and Century Boulevard	0.930	E	0.693	B	0.915	E	0.982	E	0.701	---	1.006	F	Yes	---	Yes
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Bl)	0.362	A	---	---	0.343	A	0.313	A	---	---	0.365	A	---	---	---
121	La Cienega Boulevard and 104th Street	0.406	A	---	---	0.419	A	0.419	A	---	---	0.416	A	---	---	---
122	La Cienega Boulevard and Lennox Boulevard	0.515	A	---	---	0.748	C	0.560	A	---	---	0.758	C	---	---	---
123	La Cienega Boulevard and 111th Street	0.320	A	---	---	0.374	A	0.316	A	---	---	0.397	A	---	---	---
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Hwy)	0.511	A	---	---	0.393	A	0.513	A	---	---	0.389	A	---	---	---
125	La Cienega Boulevard and Imperial Highway	0.466	A	0.296	A	0.834	D	0.503	A	0.294	---	0.830	D	---	---	---
126	La Cienega Boulevard and West 120th Street	0.814	D	---	---	0.962	E	0.784	C	---	---	0.968	E	---	---	---
127	La Cienega Boulevard and El Segundo Boulevard	0.719	C	---	---	0.901	E	0.716	C	---	---	0.908	E	---	---	---
128	Hindry Avenue and Rosecrans Avenue	0.713	C	---	---	0.794	C	0.709	C	---	---	0.790	C	---	---	---
129	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	0.882	D	0.748	C	0.845	D	0.873	D	0.718	---	0.838	D	---	---	---
130	I-405 Northbound Ramps and Century Boulevard	0.952	E	0.716	C	0.826	D	0.973	E	0.726	---	0.864	D	---	---	---
131	I-405 Northbound Ramps (e/o La Cienega Bl) and Imperial Highway	0.619	B	---	---	0.803	D	0.639	B	---	---	0.779	C	---	---	---
132	I-405 Northbound Ramps and El Segundo Boulevard	0.784	C	---	---	0.802	D	0.795	C	---	---	0.807	D	---	---	---
133	I-405 Northbound Ramps and Rosecrans Avenue	0.886	D	---	---	0.880	D	0.883	D	---	---	0.878	D	---	---	---
134	Inglewood Avenue and Manchester Boulevard	0.771	C	---	---	0.850	D	0.772	C	---	---	0.847	D	---	---	---
135	Inglewood Avenue and Arbor Vitae Street	0.662	B	---	---	0.763	C	0.670	B	---	---	0.743	C	---	---	---

Table 4.12.2-18 (5 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
136	Inglewood Avenue and Century Boulevard	0.837	D	---	---	1.000	E	0.861	D	---	---	1.020	F	---	---	Yes
137	Inglewood Avenue and Lennox Boulevard	0.904	E	---	---	1.023	F	0.902	E	---	---	1.023	F	---	---	---
138	Inglewood Avenue and Imperial Highway	1.055	F	---	---	1.144	F	1.057	F	---	---	1.148	F	---	---	---
139	Inglewood Avenue and El Segundo Boulevard	0.853	D	---	---	0.991	E	0.865	D	---	---	0.997	E	---	---	---
140	Inglewood Avenue and Rosecrans Avenue	0.896	D	---	---	1.086	F	0.895	D	---	---	1.086	F	---	---	---
141	La Brea Avenue/Overhill Drive and Stocker Street	0.946	E	---	---	1.095	F	0.944	E	---	---	1.084	F	---	---	---
142	La Brea Avenue and Slauson Avenue	0.876	D	---	---	1.013	F	0.874	D	---	---	1.010	F	---	---	---
143	La Brea Avenue and Centinela Avenue	0.970	E	---	---	1.023	F	0.970	E	---	---	1.022	F	---	---	---
144	La Brea Avenue and Florence Avenue	0.876	D	---	---	1.037	F	0.884	D	---	---	1.033	F	---	---	---
145	La Brea Avenue and Manchester Boulevard [1/]	0.834	D	---	---	0.866	D	0.836	D	---	---	0.866	D	---	---	---
146	La Brea Avenue and Arbor Vitae Street	0.597	A	---	---	0.764	C	0.593	A	---	---	0.775	C	---	---	---
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	0.834	D	---	---	0.903	E	0.857	D	---	---	0.904	E	---	---	---
148	Hawthorne Boulevard and Lennox Boulevard	0.772	C	---	---	0.856	D	0.765	C	---	---	0.838	D	---	---	---
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	0.890	D	---	---	1.020	F	0.884	D	---	---	1.005	F	---	---	---
150	Hawthorne Boulevard and Imperial Avenue	0.812	D	---	---	0.985	E	0.799	C	---	---	0.990	E	---	---	---
151	Hawthorne Boulevard and 120th Street	0.645	B	---	---	0.802	D	0.652	B	---	---	0.810	D	---	---	---
152	Hawthorne Boulevard and El Segundo Boulevard	0.741	C	---	---	0.867	D	0.750	C	---	---	0.871	D	---	---	---
153	Hawthorne Boulevard and Rosecrans Avenue	0.723	C	---	---	0.892	D	0.723	C	---	---	0.890	D	---	---	---
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	0.699	B	---	---	0.784	C	0.699	B	---	---	0.746	C	---	---	---
155	Prairie Avenue and Manchester Boulevard	0.955	E	---	---	1.025	F	0.953	E	---	---	1.021	F	---	---	---
156	Prairie Avenue and Arbor Vitae Street	0.795	C	---	---	0.880	D	0.795	C	---	---	0.882	D	---	---	---
157	Prairie Avenue and Century Boulevard	0.918	E	---	---	0.969	E	0.917	E	---	---	0.967	E	---	---	---
158	Prairie Avenue and Lennox Boulevard	0.673	B	---	---	0.680	B	0.672	B	---	---	0.680	B	---	---	---
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	0.772	C	---	---	0.742	C	0.786	C	---	---	0.743	C	---	---	---
160	Prairie Avenue and Imperial Highway	1.301	F	---	---	0.891	D	1.299	F	---	---	0.891	D	---	---	---
161	Prairie Avenue and El Segundo Boulevard	0.916	E	---	---	0.948	E	0.916	E	---	---	0.946	E	---	---	---
162	Crenshaw Boulevard and Manchester Avenue [1/]	1.015	F	---	---	1.110	F	1.012	F	---	---	1.109	F	---	---	---
163	Crenshaw Boulevard and Century Boulevard	0.923	E	---	---	1.059	F	0.922	E	---	---	1.056	F	---	---	---
164	Crenshaw Boulevard and Imperial Highway	0.876	D	---	---	1.012	F	0.879	D	---	---	1.016	F	---	---	---
165	Western Avenue and Manchester Avenue	0.841	D	---	---	0.997	E	0.841	D	---	---	0.998	E	---	---	---
166	Western Avenue and Imperial Highway	0.895	D	---	---	0.895	D	0.899	D	---	---	0.897	D	---	---	---
167	I-405 Northbound Ramps and Culver Boulevard	0.757	C	---	---	0.698	B	0.757	C	---	---	0.698	B	---	---	---
168	Walgrove Avenue and Washington Boulevard [2/]	***	F	---	---	***	F	***	F	---	---	***	F	---	---	---
169	Washington Boulevard and Washington Place at Wade Street	0.741	C	---	---	0.926	E	0.742	C	---	---	0.926	E	---	---	---

Table 4.12.2-18 (6 of 6): 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT						2024 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	**INTERSECTION**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**a.m.**	**midday**	**p.m.**
170	Inglewood Boulevard and Washington Boulevard	0.842	D	---	---	1.050	F	0.842	D	---	---	1.050	F	---	---	---
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Bl)	0.410	A	---	---	0.505	A	0.412	A	---	---	0.506	A	---	---	---
172	Washington Boulevard and Washington Place at Tilden Avenue	0.583	A	---	---	0.640	B	0.583	A	---	---	0.641	B	---	---	---
173	Overland Avenue and Sawtelle Boulevard 2/	44.8s	E	---	---	58.6s	F	42.8s	E	---	---	58.4s	F	---	---	---
174	Canfield Avenue-Washington Boulevard (Ince Bl) and Culver Boulevard	0.824	D	---	---	0.748	C	0.824	D	---	---	0.748	C	---	---	---
175	Ince Boulevard and Washington Boulevard	0.967	E	---	---	0.949	E	0.967	E	---	---	0.949	E	---	---	---
176	National Boulevard and Venice Boulevard	0.885	D	---	---	1.021	F	0.884	D	---	---	1.020	F	---	---	---
177	National Boulevard and Washington Boulevard	0.820	D	---	---	0.966	E	0.820	D	---	---	0.966	E	---	---	---
178	La Cienega Boulevard and Washington Boulevard	0.926	E	---	---	1.044	F	0.926	E	---	---	1.044	F	---	---	---
179	Centinela Avenue and Florence Avenue	0.900	D	---	---	0.860	D	0.903	E	---	---	0.859	D	---	---	---
180	Prairie Avenue and Florence Avenue	0.804	D	---	---	0.886	D	0.802	D	---	---	0.885	D	---	---	---
181	Van Ness Avenue and Manchester Avenue	0.982	E	---	---	0.993	E	0.985	E	---	---	0.992	E	---	---	---
182	Van Ness Avenue and Century Boulevard	0.719	C	---	---	0.787	C	0.720	C	---	---	0.773	C	---	---	---
183	Van Ness Avenue and Imperial Highway	0.861	D	---	---	0.901	E	0.865	D	---	---	0.899	D	---	---	---

NOTES:

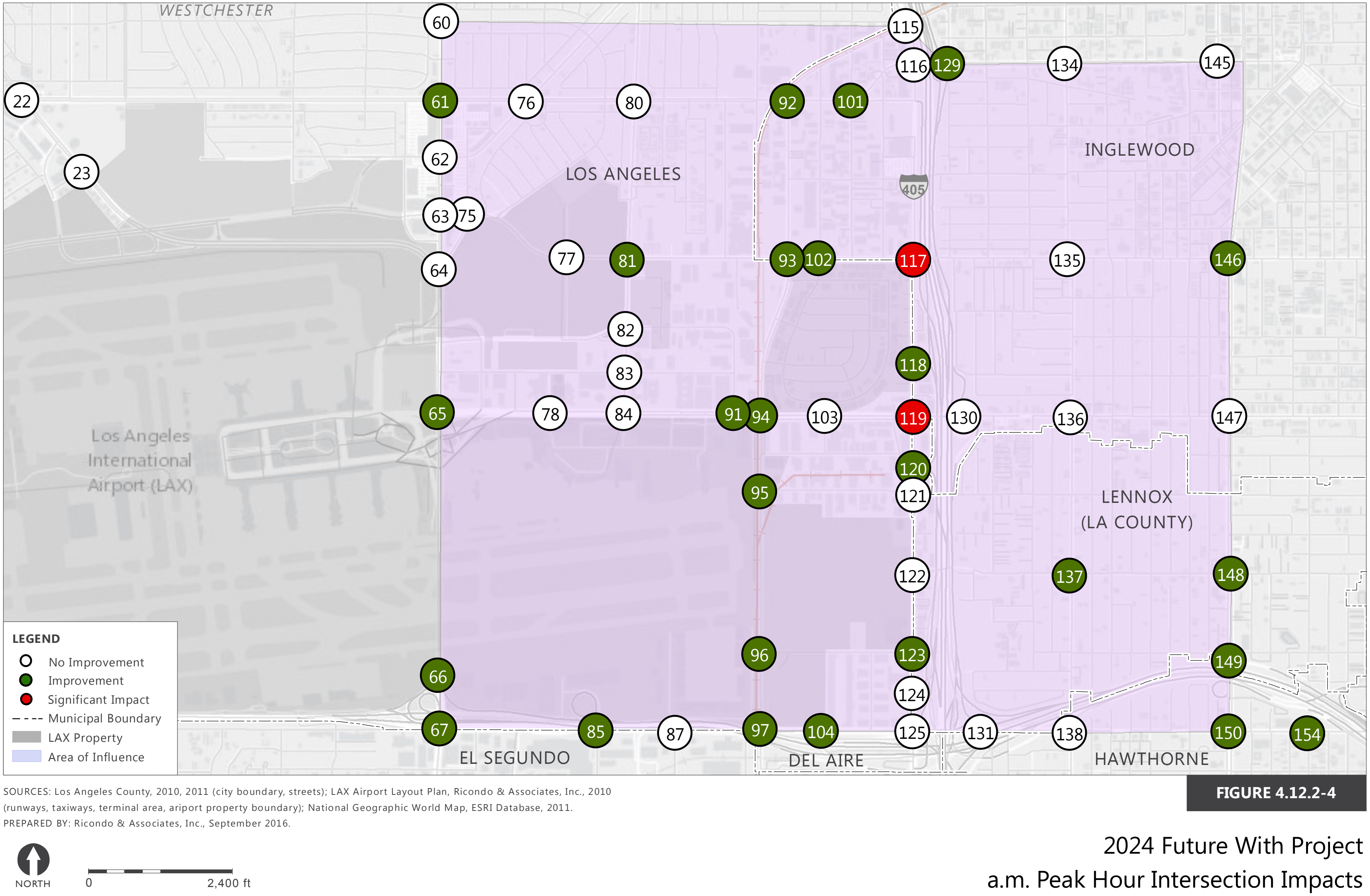
--- = not available

*** indicates over-saturated conditions

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.



SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.12.2-4

2024 Future With Project
a.m. Peak Hour Intersection Impacts

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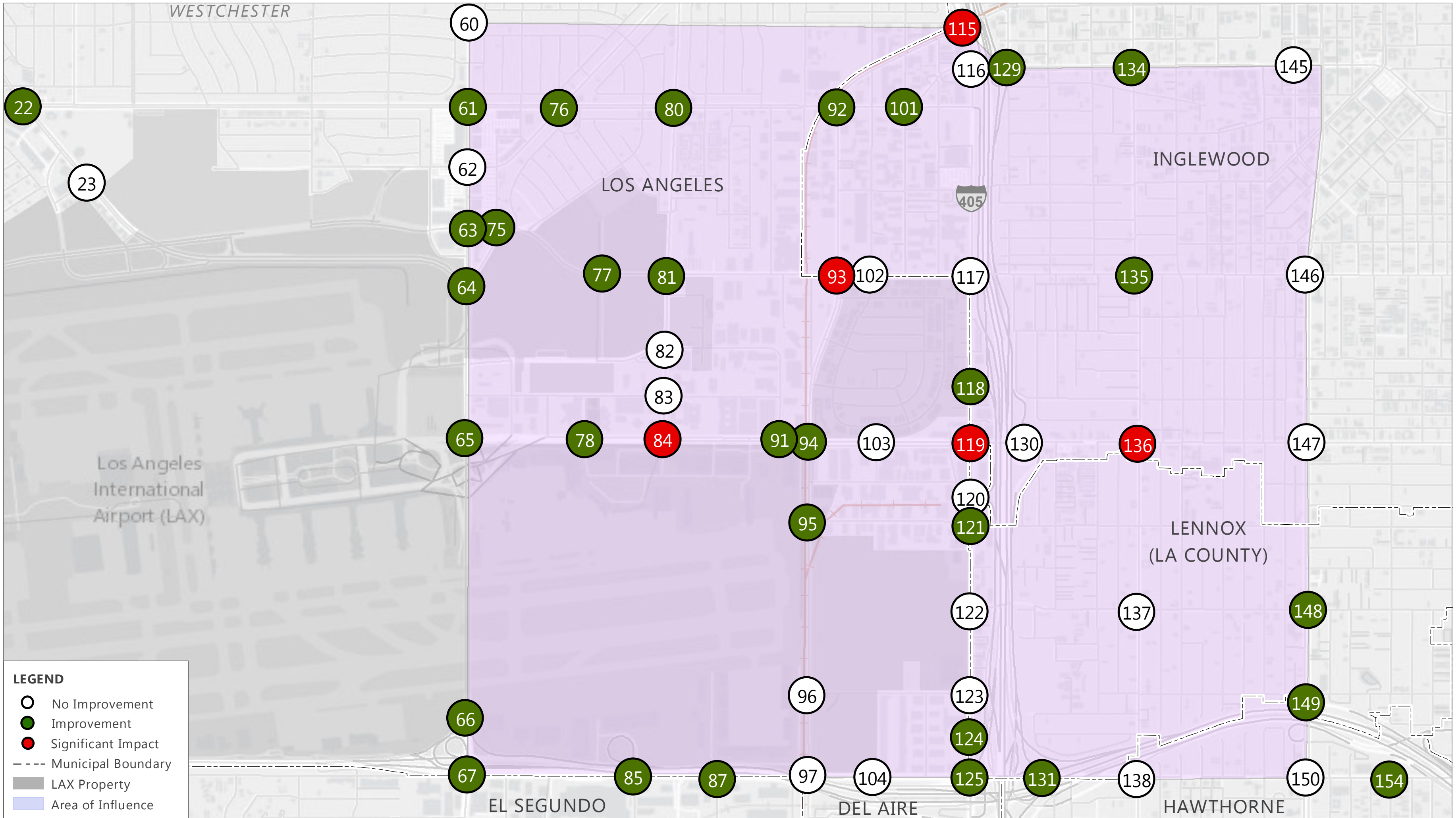

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 2,400 ft

FIGURE 4.12.2-5

2024 Future With Project
p.m. Peak Hour Intersection Impacts

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Table 4.12.2-19: Intersection Level of Service Analysis – 2024 With Project

LEVEL OF SERVICE	AM PEAK HOUR	MIDDAY PEAK HOUR	PM PEAK HOUR
A	30	10	26
B	33	13	24
C	35	8	30
D	43	2	42
E	28	3	30
F	14	0	31
Total	183	36 [1/]	183
Total Number of Impacts	2	2	5
Total Individual Intersection Impacts		6	

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

2035 Future Without Project Compared to 2035 Future With Project

The intersection impacts for the a.m., p.m., and midday peaks of the 2035 Future With Project scenario as compared to the 2035 Future Without Project scenario are shown on **Table 4.12.2-20**.

Under the 2035 Future With Project scenario, significant (and cumulatively considerable) impacts would occur at one intersection during the a.m. peak hour; at five intersections during the p.m. peak hour; and at two intersections during both the a.m. and p.m. peak hour, as follows:

- Sepulveda Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS E.
- Aviation Boulevard and Arbor Vitae Street. Significant impact in the p.m. peak hour at LOS F.
- I-105 Freeway Ramps (east of Aviation Boulevard) and Imperial Highway. Significant impact in the p.m. peak hour at LOS C.
- La Cienega Boulevard and Florence Avenue. Significant impact in the p.m. peak hour at LOS F.
- La Cienega Boulevard and Manchester Boulevard. Significant impact in the p.m. peak hour at LOS F.
- La Cienega Boulevard and Arbor Vitae Street. Significant impact in the a.m. peak hour at LOS F and in the p.m. peak hour at LOS F.
- La Cienega Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS F and in the p.m. peak hour at LOS F.
- Inglewood Avenue and Century Boulevard. Significant impact in the p.m. peak hour at LOS F.

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Table 4.12.2-20 (1 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
1	Ocean Avenue/Via Marina and Washington Boulevard	0.718	C	---	---	0.920	E	0.715	C	---	---	0.917	E	---	---	---
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	0.827	D	---	---	0.788	C	0.825	D	---	---	0.774	C	---	---	---
3	Vista del Mar and Imperial Highway	0.556	A	---	---	0.571	A	0.553	A	---	---	0.561	A	---	---	---
4	Vista del Mar and Grand Avenue	0.713	C	---	---	0.583	A	0.706	C	---	---	0.575	A	---	---	---
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	0.983	E	---	---	0.941	E	0.981	E	---	---	0.931	E	---	---	---
6	Nicholson Street and Culver Boulevard	0.762	C	---	---	0.886	D	0.759	C	---	---	0.871	D	---	---	---
7	Pershing Drive and Manchester Avenue	0.483	A	---	---	0.510	A	0.481	A	---	---	0.509	A	---	---	---
8	Pershing Drive and Westchester Parkway	0.457	A	---	---	0.362	A	0.455	A	---	---	0.354	A	---	---	---
9	Pershing Drive and Imperial Highway	0.550	A	---	---	0.501	A	0.541	A	---	---	0.486	A	---	---	---
10	Culver Boulevard and Jefferson Boulevard	0.781	C	---	---	0.907	E	0.779	C	---	---	0.895	D	---	---	---
11	Main Street and Imperial Highway	0.694	B	---	---	0.633	B	0.701	C	---	---	0.632	B	---	---	---
12	Lincoln Boulevard and Venice Boulevard [1/]	0.966	E	---	---	0.973	E	0.966	E	---	---	0.973	E	---	---	---
13	Lincoln Boulevard and Washington Boulevard	0.942	E	---	---	0.892	D	0.941	E	---	---	0.891	D	---	---	---
14	Lincoln Boulevard and SR-90 Ramps [1/]	0.689	B	---	---	0.686	B	0.691	B	---	---	0.682	B	---	---	---
15	Lincoln Boulevard and Bali Way	0.607	B	---	---	0.646	B	0.608	B	---	---	0.643	B	---	---	---
16	Lincoln Boulevard and Mindanao Way	0.808	D	---	---	0.882	D	0.807	D	---	---	0.890	D	---	---	---
17	Lincoln Boulevard and Fiji Way	0.694	B	---	---	0.818	D	0.691	B	---	---	0.826	D	---	---	---
18	Lincoln Boulevard and Jefferson Boulevard	0.825	D	---	---	0.742	C	0.821	D	---	---	0.739	C	---	---	---
19	Lincoln Boulevard and Bluff Creek Drive	0.683	B	---	---	0.551	A	0.690	B	---	---	0.553	A	---	---	---
20	Lincoln Boulevard and Loyola Marymount University Drive	0.739	C	---	---	0.677	B	0.744	C	---	---	0.679	B	---	---	---
21	Lincoln Boulevard and 83rd Street	1.020	F	---	---	0.791	C	1.027	F	---	---	0.794	C	---	---	---
22	Lincoln Boulevard and Manchester Avenue [1/]	0.815	D	0.702	C	0.850	D	0.821	D	0.702	C	0.850	D	---	---	---
23	Lincoln Boulevard and La Tijera Boulevard	0.419	A	0.400	A	0.430	A	0.417	A	0.408	A	0.476	A	---	---	---
24	Centinela Avenue and Venice Boulevard [1/]	0.995	E	---	---	0.955	E	0.995	E	---	---	0.956	E	---	---	---
25	Centinela Avenue and Washington Place	0.891	D	---	---	0.987	E	0.892	D	---	---	0.988	E	---	---	---
26	Centinela Avenue and Washington Boulevard	0.924	E	---	---	1.041	F	0.925	E	---	---	1.042	F	---	---	---
27	Centinela Avenue and Culver Boulevard	1.023	F	---	---	1.127	F	1.025	F	---	---	1.127	F	---	---	---
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	0.604	B	---	---	0.517	A	0.605	B	---	---	0.525	A	---	---	---
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	0.759	C	---	---	0.513	A	0.760	C	---	---	0.517	A	---	---	---
30	Centinela Avenue and Jefferson Boulevard	1.043	F	---	---	0.833	D	1.025	F	---	---	0.824	D	---	---	---
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	0.799	C	---	---	0.887	D	0.803	D	---	---	0.889	D	---	---	---
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	0.902	E	---	---	0.992	E	0.903	E	---	---	0.992	E	---	---	---
33	Sawtelle Boulevard and Washington Place	0.631	B	---	---	0.720	C	0.632	B	---	---	0.723	C	---	---	---

Table 4.12.2-20 (2 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	**INTERSECTION**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**V/C**	**LOS**	**a.m.**	**midday**	**p.m.**
34	Sawtelle Boulevard and Washington Boulevard	0.729	C	---	---	0.811	D	0.730	C	---	---	0.811	D	---	---	---
35	Sawtelle Boulevard and Culver Boulevard	0.821	D	---	---	0.976	E	0.822	D	---	---	0.977	E	---	---	---
36	I-405 Southbound Ramps and Jefferson Boulevard	0.685	B	---	---	0.592	A	0.676	B	---	---	0.588	A	---	---	---
37	I-405 Northbound Ramps and Jefferson Boulevard	0.970	E	---	---	0.794	C	0.970	E	---	---	0.798	C	---	---	---
38	Slauson Avenue and Jefferson Boulevard	0.479	A	---	---	0.528	A	0.482	A	---	---	0.529	A	---	---	---
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	0.785	C	---	---	1.005	F	0.785	C	---	---	1.005	F	---	---	---
40	Sepulveda Boulevard and Washington Place	0.912	E	---	---	0.920	E	0.912	E	---	---	0.921	E	---	---	---
41	Sepulveda Boulevard and Washington Boulevard	0.830	D	---	---	0.886	D	0.832	D	---	---	0.887	D	---	---	---
42	Sepulveda Boulevard and Culver Boulevard	0.956	E	---	---	0.941	E	0.957	E	---	---	0.941	E	---	---	---
43	Sepulveda Boulevard and Braddock Drive	0.731	C	---	---	0.744	C	0.731	C	---	---	0.744	C	---	---	---
44	Overland Avenue and Venice Boulevard [1/]	0.910	E	---	---	0.949	E	0.910	E	---	---	0.950	E	---	---	---
45	Overland Avenue and Washington Boulevard	0.912	E	---	---	1.078	F	0.912	E	---	---	1.078	F	---	---	---
46	Overland Avenue and Culver Boulevard	1.018	F	---	---	0.982	E	1.018	F	---	---	0.982	E	---	---	---
47	Duquesne Avenue and Washington Boulevard	0.623	B	---	---	0.742	C	0.623	B	---	---	0.742	C	---	---	---
48	Duquesne Avenue and Culver Boulevard	0.699	B	---	---	0.737	C	0.699	B	---	---	0.737	C	---	---	---
49	Culver Boulevard and Washington Boulevard-Irving Place	0.724	C	---	---	0.733	C	0.724	C	---	---	0.733	C	---	---	---
50	Duquesne Avenue and Jefferson Boulevard	0.873	D	---	---	0.846	D	0.876	D	---	---	0.847	D	---	---	---
51	Overland Avenue and Jefferson Boulevard	0.844	D	---	---	0.910	E	0.845	D	---	---	0.911	E	---	---	---
52	Sepulveda Boulevard and Jefferson Boulevard	0.617	B	---	---	0.647	B	0.617	B	---	---	0.647	B	---	---	---
53	Sepulveda Boulevard and Sawtelle Boulevard	0.702	C	---	---	0.812	D	0.703	C	---	---	0.814	D	---	---	---
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	0.908	E	---	---	0.806	D	0.909	E	---	---	0.807	D	---	---	---
55	Sepulveda Boulevard and Slauson Avenue	0.733	C	---	---	0.755	C	0.736	C	---	---	0.755	C	---	---	---
56	Sepulveda Boulevard and Centinela Avenue	0.872	D	---	---	1.082	F	0.862	D	---	---	1.078	F	---	---	---
57	Sepulveda Boulevard and Howard Hughes Parkway	0.808	D	---	---	0.694	B	0.806	D	---	---	0.686	B	---	---	---
58	Sepulveda Boulevard and 76th Street-77th Street	0.788	C	---	---	0.690	B	0.800	D	---	---	0.694	B	---	---	---
59	Sepulveda Boulevard and 79th Street-80th Street	0.714	C	---	---	0.595	A	0.728	C	---	---	0.619	B	---	---	---
60	Sepulveda Boulevard and 83rd Street	0.589	A	---	---	0.567	A	0.611	B	---	---	0.566	A	---	---	---
61	Sepulveda Boulevard and Manchester Avenue [1/]	0.752	C	0.739	C	0.961	E	0.750	C	0.722	C	0.937	E	---	---	---
62	Sepulveda Boulevard and La Tijera Boulevard	0.589	A	0.651	B	0.733	C	0.612	B	0.649	B	0.734	C	---	---	---
63	Sepulveda Boulevard and Westchester Parkway	0.812	D	0.965	E	0.971	E	0.831	D	0.954	E	0.912	E	---	---	---
64	Sepulveda Boulevard and Lincoln Boulevard [1/]	0.685	B	0.648	B	0.715	C	0.706	C	0.632	B	0.719	C	---	---	---
65	Sepulveda Boulevard and Century Boulevard	0.839	D	0.777	C	0.947	E	0.909	E	0.830	D	0.866	D	Yes	Yes	---
66	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	1.104	F	1.025	F	1.001	F	1.063	F	0.975	E	0.963	E	---	---	---
67	Sepulveda Boulevard and Imperial Highway	0.792	C	0.647	B	0.940	E	0.733	C	0.658	B	0.893	D	---	---	---

Table 4.12.2-20 (3 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
68	Sepulveda Boulevard and Mariposa Avenue	0.888	D	---	---	0.823	D	0.888	D	---	---	0.827	D	---	---	---
69	Sepulveda Boulevard and Grand Avenue	1.146	F	---	---	0.984	E	1.149	F	---	---	0.987	E	---	---	---
70	Sepulveda Boulevard and El Segundo Boulevard 1/	0.848	D	---	---	1.050	F	0.850	D	---	---	1.049	F	---	---	---
71	Sepulveda Boulevard and Rosecrans Avenue 1/	1.056	F	---	---	1.068	F	1.053	F	---	---	1.067	F	---	---	---
72	SR-90 Westbound Ramps and Slauson Avenue	0.780	C	---	---	0.843	D	0.784	C	---	---	0.841	D	---	---	---
73	Buckingham Parkway and Slauson Avenue	0.858	D	---	---	0.831	D	0.856	D	---	---	0.828	D	---	---	---
74	I-405 Southbound Ramps and Howard Hughes Parkway	0.458	A	---	---	0.243	A	0.455	A	---	---	0.228	A	---	---	---
75	Sepulveda Eastway and Westchester Parkway	0.491	A	---	---	0.787	C	0.506	A	---	---	0.755	C	---	---	---
76	La Tijera Boulevard and Manchester Avenue	0.613	B	0.649	B	0.695	B	0.624	B	0.667	B	0.664	B	---	---	---
77	Jenny Avenue and Westchester Parkway	0.212	A	0.338	A	0.457	A	0.356	A	0.442	A	0.468	A	---	---	---
78	Avion Drive and Century Boulevard	0.515	A	0.572	A	0.640	B	0.483	A	0.466	A	0.537	A	---	---	---
79	La Tijera Boulevard and Airport Boulevard	0.619	B	0.621	B	0.725	C	0.629	B	0.573	A	0.682	B	---	---	---
80	Airport Boulevard and Manchester Avenue	0.682	B	0.761	C	0.832	D	0.701	C	0.657	B	0.725	C	---	---	---
81	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	0.744	C	0.858	D	1.153	F	0.754	C	0.677	B	0.933	E	---	---	---
82	Airport Boulevard and 96th Street	0.341	A	0.553	A	0.580	A	0.475	A	0.500	A	0.568	A	---	---	---
83	Airport Boulevard and 98th Street	0.433	A	0.573	A	0.625	B	0.657	B	0.618	B	0.655	B	---	---	---
84	Airport Boulevard and Century Boulevard	0.672	B	0.800	C	0.725	C	0.650	B	0.671	B	0.717	C	---	---	---
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	0.547	A	---	---	0.480	A	0.549	A	---	---	0.496	A	---	---	---
86	Nash Street and El Segundo Boulevard	0.646	B	---	---	0.721	C	0.642	B	---	---	0.708	C	---	---	---
87	Douglas Street and Imperial Highway	0.398	A	---	---	0.739	C	0.438	A	---	---	0.715	C	---	---	---
88	Douglas Street and El Segundo Boulevard	0.848	D	---	---	0.989	E	0.855	D	---	---	0.986	E	---	---	---
89	I-405 Northbound Ramps and La Tijera Boulevard	0.981	E	0.887	D	0.876	D	0.878	D	0.817	D	0.804	D	---	---	---
90	I-405 Southbound Ramps and La Tijera Boulevard	0.773	C	0.639	B	0.975	E	0.766	C	0.623	B	0.885	D	---	---	---
91	Bellanca Avenue and Century Boulevard	0.654	B	---	---	0.761	C	0.455	A	---	---	0.498	A	---	---	---
92	Aviation Boulevard/Florence Avenue and Manchester Avenue	0.795	C	0.843	D	0.895	D	0.703	C	0.732	C	0.712	C	---	---	---
93	Aviation Boulevard and Arbor Vitae Street	0.996	E	0.731	C	0.902	E	0.975	E	0.777	C	1.003	F	---	Yes	Yes
94	Aviation Boulevard and Century Boulevard	0.961	E	0.900	D	1.051	F	0.824	D	0.869	D	0.948	E	---	---	---
95	Aviation Boulevard and 104th Street	0.790	C	0.752	C	0.875	D	0.782	C	0.776	C	0.866	D	---	---	---
96	Aviation Boulevard and 111th Street	0.957	E	0.867	D	0.872	D	0.842	D	0.819	D	0.820	D	---	---	---
97	Aviation Boulevard and Imperial Highway	0.878	D	0.694	B	0.923	E	0.652	B	0.640	B	0.923	E	---	---	---
98	Aviation Boulevard and West 120th Street	0.905	E	---	---	0.968	E	0.869	D	---	---	0.941	E	---	---	---
99	Aviation Boulevard and El Segundo Boulevard	0.991	E	---	---	1.076	F	0.987	E	---	---	1.078	F	---	---	---
100	Aviation Boulevard and Rosecrans Avenue	1.013	F	---	---	1.013	F	1.010	F	---	---	1.013	F	---	---	---
101	Hindry Avenue and Manchester Boulevard	0.731	C	---	---	0.862	D	0.737	C	---	---	0.757	C	---	---	---

Table 4.12.2-20 (4 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
102	Hindry Avenue and Arbor Vitae Street [2/]	49.4s	E	16.5 s	C	24.1s	C	0.667	B	0.389	A	0.656	B	---	---	---
103	Concourse Way and Century Boulevard	0.337	A	---	---	0.528	A	0.562	A	---	---	0.637	B	---	---	---
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	0.838	D	0.440	A	0.713	C	0.823	D	0.592	A	0.786	C	---	---	Yes
105	La Tijera Boulevard and Centinela Avenue	0.891	D	---	---	0.997	E	0.887	D	---	---	0.970	E	---	---	---
106	Jefferson Boulevard and National Boulevard	1.023	F	---	---	0.927	E	1.024	F	---	---	0.924	E	---	---	---
107	Jefferson Boulevard and Higuera Street/Rodeo Road	0.742	C	---	---	0.798	C	0.741	C	---	---	0.797	C	---	---	---
108	La Cienega Boulevard and Jefferson Boulevard [1/]	1.000	E	---	---	1.052	F	0.996	E	---	---	1.053	F	---	---	---
109	La Cienega Boulevard and Rodeo Road	1.277	F	---	---	1.189	F	1.273	F	---	---	1.186	F	---	---	---
110	La Cienega Boulevard and Stocker Street [1/]	1.156	F	---	---	1.244	F	1.152	F	---	---	1.240	F	---	---	---
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	1.251	F	---	---	1.200	F	1.247	F	---	---	1.193	F	---	---	---
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	1.114	F	---	---	1.042	F	1.110	F	---	---	1.042	F	---	---	---
113	La Cienega Boulevard and La Tijera Boulevard	0.617	B	---	---	0.759	C	0.613	B	---	---	0.750	C	---	---	---
114	La Cienega Boulevard and Centinela Avenue [1/]	0.985	E	---	---	1.149	F	0.981	E	---	---	1.141	F	---	---	---
115	La Cienega Boulevard and Florence Avenue	0.826	D	1.022	F	1.162	F	0.839	D	1.037	F	1.208	F	---	---	Yes
116	La Cienega Boulevard and Manchester Boulevard	0.801	D	0.908	E	0.880	D	0.861	D	1.002	F	1.002	F	---	Yes	Yes
117	La Cienega Boulevard and Arbor Vitae Street	0.887	D	0.724	C	0.852	D	1.122	F	0.807	D	1.072	F	Yes	---	Yes
118	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Bl)	0.809	D	0.703	C	0.705	C	0.682	B	0.616	B	0.605	B	---	---	---
119	La Cienega Boulevard and Century Boulevard	0.985	E	0.813	D	1.088	F	1.032	F	0.864	D	1.161	F	Yes	Yes	Yes
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Bl)	0.385	A	---	---	0.381	A	0.327	A	---	---	0.407	A	---	---	---
121	La Cienega Boulevard and 104th Street	0.478	A	---	---	0.506	A	0.461	A	---	---	0.477	A	---	---	---
122	La Cienega Boulevard and Lennox Boulevard	0.583	A	---	---	0.836	D	0.619	B	---	---	0.845	D	---	---	---
123	La Cienega Boulevard and 111th Street	0.433	A	---	---	0.453	A	0.445	A	---	---	0.453	A	---	---	---
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Hwy)	0.565	A	---	---	0.424	A	0.592	A	---	---	0.421	A	---	---	---
125	La Cienega Boulevard and Imperial Highway	0.532	A	0.341	A	0.899	D	0.598	A	0.357	A	0.899	D	---	---	---
126	La Cienega Boulevard and West 120th Street	0.848	D	---	---	0.999	E	0.810	D	---	---	1.004	F	---	---	---
127	La Cienega Boulevard and El Segundo Boulevard	0.748	C	---	---	0.918	E	0.744	C	---	---	0.926	E	---	---	---
128	Hindry Avenue and Rosecrans Avenue	0.725	C	---	---	0.812	D	0.722	C	---	---	0.817	D	---	---	---
129	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	0.923	E	0.778	C	0.896	D	0.907	E	0.746	C	0.913	E	---	---	---
130	I-405 Northbound Ramps and Century Boulevard	0.993	E	0.761	C	0.890	D	0.995	E	0.752	C	0.908	E	---	---	---
131	I-405 Northbound Ramps (e/o La Cienega Bl) and Imperial Highway	0.653	B	---	---	0.832	D	0.689	B	---	---	0.813	D	---	---	---
132	I-405 Northbound Ramps and El Segundo Boulevard	0.801	D	---	---	0.818	D	0.812	D	---	---	0.814	D	---	---	---
133	I-405 Northbound Ramps and Rosecrans Avenue	0.900	D	---	---	0.898	D	0.898	D	---	---	0.898	D	---	---	---
134	Inglewood Avenue and Manchester Boulevard	0.804	D	---	---	0.887	D	0.801	D	---	---	0.907	E	---	---	---
135	Inglewood Avenue and Arbor Vitae Street	0.674	B	---	---	0.802	D	0.698	B	---	---	0.798	C	---	---	---

Table 4.12.2-20 (5 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
136	Inglewood Avenue and Century Boulevard	0.873	D	---	---	1.064	F	0.886	D	---	---	1.084	F	---	---	Yes
137	Inglewood Avenue and Lennox Boulevard	0.952	E	---	---	1.086	F	0.950	E	---	---	1.086	F	---	---	---
138	Inglewood Avenue and Imperial Highway	1.095	F	---	---	1.195	F	1.095	F	---	---	1.198	F	---	---	---
139	Inglewood Avenue and El Segundo Boulevard	0.879	D	---	---	1.007	F	0.896	D	---	---	1.009	F	---	---	---
140	Inglewood Avenue and Rosecrans Avenue	0.923	E	---	---	1.120	F	0.921	E	---	---	1.122	F	---	---	---
141	La Brea Avenue/Overhill Drive and Stocker Street	0.983	E	---	---	1.139	F	0.979	E	---	---	1.124	F	---	---	---
142	La Brea Avenue and Slauson Avenue	0.939	E	---	---	1.066	F	0.935	E	---	---	1.063	F	---	---	---
143	La Brea Avenue and Centinela Avenue	1.016	F	---	---	1.057	F	1.014	F	---	---	1.062	F	---	---	---
144	La Brea Avenue and Florence Avenue	0.923	E	---	---	1.127	F	0.934	E	---	---	1.125	F	---	---	---
145	La Brea Avenue and Manchester Boulevard [1/]	0.863	D	---	---	0.911	E	0.870	D	---	---	0.925	E	---	---	---
146	La Brea Avenue and Arbor Vitae Street	0.626	B	---	---	0.805	D	0.623	B	---	---	0.803	D	---	---	---
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	0.876	D	---	---	0.986	E	0.884	D	---	---	0.985	E	---	---	---
148	Hawthorne Boulevard and Lennox Boulevard	0.821	D	---	---	0.902	E	0.806	D	---	---	0.880	D	---	---	---
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	0.919	E	---	---	1.039	F	0.910	E	---	---	1.025	F	---	---	---
150	Hawthorne Boulevard and Imperial Avenue	0.861	D	---	---	1.037	F	0.849	D	---	---	1.037	F	---	---	---
151	Hawthorne Boulevard and 120th Street	0.669	B	---	---	0.833	D	0.668	B	---	---	0.847	D	---	---	---
152	Hawthorne Boulevard and El Segundo Boulevard	0.775	C	---	---	0.898	D	0.784	C	---	---	0.899	D	---	---	---
153	Hawthorne Boulevard and Rosecrans Avenue	0.755	C	---	---	0.922	E	0.754	C	---	---	0.924	E	---	---	---
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	0.703	C	---	---	0.800	C	0.702	C	---	---	0.762	C	---	---	---
155	Prairie Avenue and Manchester Boulevard	0.983	E	---	---	1.069	F	0.980	E	---	---	1.073	F	---	---	---
156	Prairie Avenue and Arbor Vitae Street	0.816	D	---	---	0.901	E	0.814	D	---	---	0.888	D	---	---	---
157	Prairie Avenue and Century Boulevard	0.959	E	---	---	1.011	F	0.955	E	---	---	1.010	F	---	---	---
158	Prairie Avenue and Lennox Boulevard	0.712	C	---	---	0.720	C	0.708	C	---	---	0.719	C	---	---	---
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	0.811	D	---	---	0.767	C	0.830	D	---	---	0.772	C	---	---	---
160	Prairie Avenue and Imperial Highway	1.346	F	---	---	0.952	E	1.347	F	---	---	0.958	E	---	---	---
161	Prairie Avenue and El Segundo Boulevard	0.950	E	---	---	0.985	E	0.947	E	---	---	0.989	E	---	---	---
162	Crenshaw Boulevard and Manchester Avenue [1/]	1.055	F	---	---	1.145	F	1.054	F	---	---	1.151	F	---	---	---
163	Crenshaw Boulevard and Century Boulevard	0.948	E	---	---	1.120	F	0.944	E	---	---	1.119	F	---	---	---
164	Crenshaw Boulevard and Imperial Highway	0.924	E	---	---	1.067	F	0.928	E	---	---	1.070	F	---	---	---
165	Western Avenue and Manchester Avenue	0.869	D	---	---	1.056	F	0.871	D	---	---	1.059	F	---	---	---
166	Western Avenue and Imperial Highway	0.915	E	---	---	0.941	E	0.918	E	---	---	0.944	E	---	---	---
167	I-405 Northbound Ramps and Culver Boulevard	0.781	C	---	---	0.740	C	0.781	C	---	---	0.740	C	---	---	---
168	Walgrove Avenue and Washington Boulevard [2/]	***	F	---	---	***	F	***	F	---	---	***	F	---	---	---
169	Washington Boulevard and Washington Place at Wade Street	0.772	C	---	---	0.955	E	0.772	C	---	---	0.959	E	---	---	---

Table 4.12.2-20 (6 of 6): 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
170	Inglewood Boulevard and Washington Boulevard	0.842	D	---	---	1.084	F	0.845	D	---	---	1.085	F	---	---	---
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Bl)	0.419	A	---	---	0.527	A	0.420	A	---	---	0.527	A	---	---	---
172	Washington Boulevard and Washington Place at Tilden Avenue	0.600	A	---	---	0.659	B	0.600	A	---	---	0.660	B	---	---	---
173	Overland Avenue and Sawtelle Boulevard 2/	49.7s	E	---	---	63.6s	F	49.7s	E	---	---	63.2s	F	---	---	---
174	Canfield Avenue-Washington Boulevard (Ince Bl) and Culver Boulevard	0.839	D	---	---	0.795	C	0.839	D	---	---	0.795	C	---	---	---
175	Ince Boulevard and Washington Boulevard	1.002	F	---	---	1.003	F	1.002	F	---	---	1.003	F	---	---	---
176	National Boulevard and Venice Boulevard	0.931	E	---	---	1.053	F	0.931	E	---	---	1.051	F	---	---	---
177	National Boulevard and Washington Boulevard	0.865	D	---	---	1.006	F	0.865	D	---	---	1.006	F	---	---	---
178	La Cienega Boulevard and Washington Boulevard	0.959	E	---	---	1.105	F	0.959	E	---	---	1.105	F	---	---	---
179	Centinela Avenue and Florence Avenue	0.934	E	---	---	0.902	E	0.932	E	---	---	0.901	E	---	---	---
180	Prairie Avenue and Florence Avenue	0.820	D	---	---	0.917	E	0.816	D	---	---	0.915	E	---	---	---
181	Van Ness Avenue and Manchester Avenue	1.013	F	---	---	1.024	F	1.011	F	---	---	1.031	F	---	---	---
182	Van Ness Avenue and Century Boulevard	0.752	C	---	---	0.823	D	0.748	C	---	---	0.819	D	---	---	---
183	Van Ness Avenue and Imperial Highway	0.903	E	---	---	0.945	E	0.908	E	---	---	0.948	E	---	---	---

NOTES:

--- = not available

*** indicates over-saturated conditions

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Four intersections would be significantly impacted during the mid-day peak hour, as follows:

- Sepulveda Boulevard and Century Boulevard. Significant impact in MD Peak Hour at LOS D
- Aviation Boulevard and Arbor Vitae Street. Significant impact in MD Peak Hour at LOS C
- La Cienega Boulevard and Manchester Boulevard. Significant impact in MD Peak Hour at LOS F
- La Cienega Boulevard and Century Boulevard. Significant impact in MD Peak Hour at LOS D

The proposed Project would not result in significant traffic impacts at the remaining 175 of the 183 study intersections during either the a.m. or p.m. peak hour, or the remaining 32 of the 36 study intersections for the midday peak hour.

A summary of the number of intersections operating at each LOS is shown in **Table 4.12.2-21**.

Table 4.12.2-21: Intersection Level of Service Analysis – 2015 With Project

LEVEL OF SERVICE	AM PEAK HOUR	MIDDAY PEAK HOUR	PM PEAK HOUR
A	22	8	23
B	26	11	15
C	34	7	28
D	43	6	34
E	36	2	37
F	22	2	46
Total	183	36 [1/]	183
Total Number of Impacts	3	4	7
Total Individual Intersection Impacts		8	

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

The intersection analysis shows that the system-wide operations within the Study Area would remain largely unchanged during the morning peak hour, and would be improved during the p.m. peak hour. During the evening peak hour, it is worth noting that intersection operations at 34 of the 55 locations (62 percent) within the area of influence were improved compared to the 2035 Future Without Project. Impacted and improved intersections for the 2035 Future With Project scenario for the morning and evening peak hours are shown on **Figure 4.12.2-6** and **Figure 4.12.2-7**, respectively.

[Draft]

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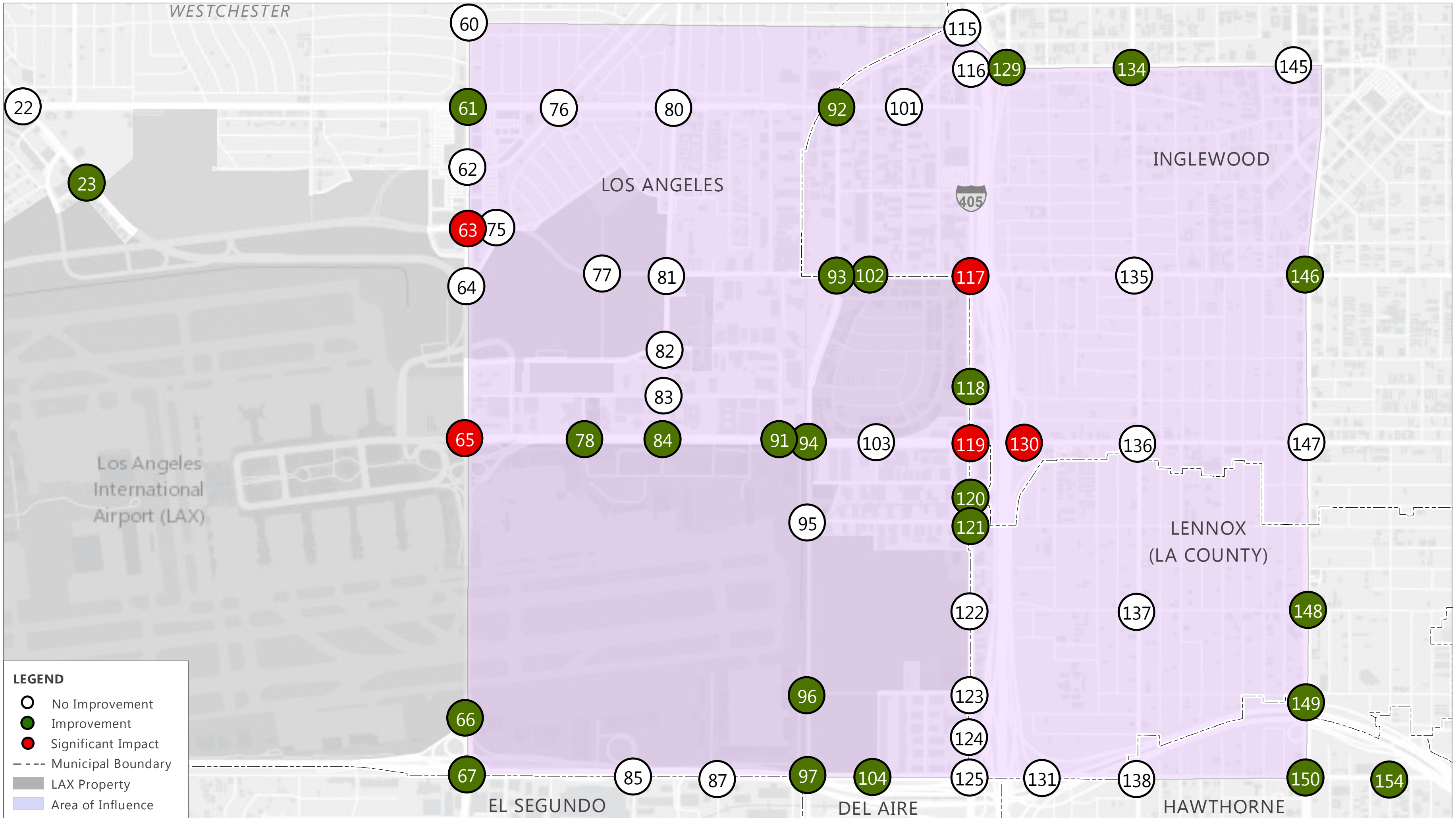

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.12.2-6

2035 Future With Project
a.m. Peak Hour Intersection Impacts

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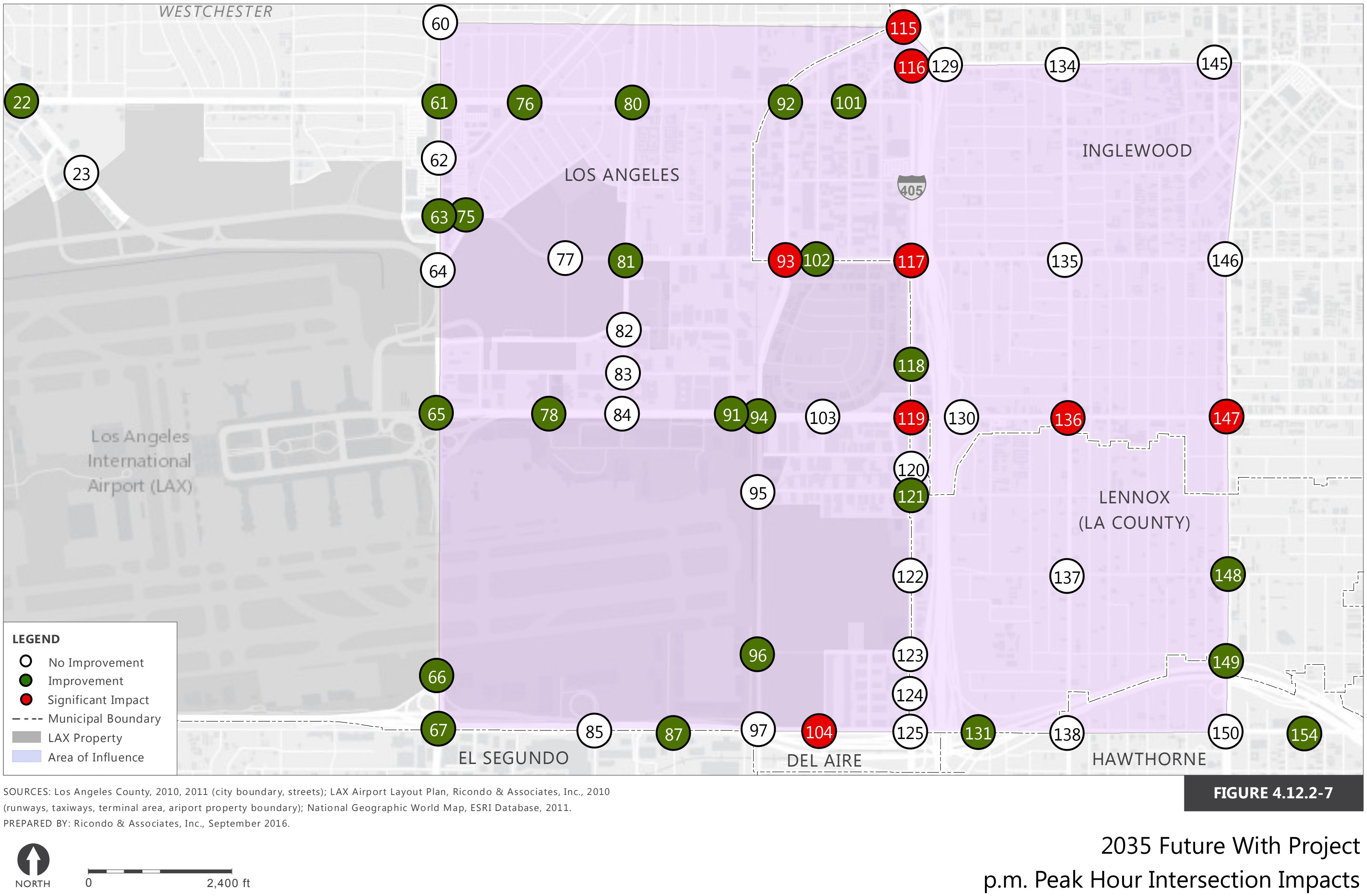

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 4.12.2-7

2035 Future With Project
p.m. Peak Hour Intersection Impacts

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Congestion Management Program Analysis

Baseline (2015) compared to 2015 With Project

Table 4.12.2-22 summarizes the results of the LOS analysis at the analyzed CMP arterial locations for the 2015 With Project scenario. As indicated in the table, the proposed Project would not cause significant impacts at any of the CMP arterial monitoring locations under the 2015 With Project conditions.

2024 Future Without Project compared to 2024 Future With Project

Table 4.12.2-23 summarizes the results of the LOS analysis at the analyzed CMP arterial locations for the 2024 Future With Project scenario. As indicated in the table, the proposed Project would not cause significant impacts at any of the CMP arterial monitoring locations under the 2024 Future With Project conditions.

2035 Future Without Project compared to 2035 Future With Project

Table 4.12.2-24 summarizes the results of the LOS analysis at the analyzed CMP arterial locations for the 2035 Future With Project scenario. As indicated in the table, the proposed Project would not cause significant impacts at any of the CMP arterial monitoring locations under the 2035 Future With Project conditions.

Freeway Analysis (Cumulative Impacts)

Consistent with Caltrans methodology, freeway mainline segments, freeway high occupancy vehicle (HOV) segments, freeway off-ramps, freeway on-ramps, and Caltrans arterial intersections within the Study Area were analyzed for significant impacts.

Existing Conditions (2015) Compared to 2015 With Project

The freeway mainline segment analysis for the 2015 With Project scenario is shown in **Table 4.12.2-25** and **Table 4.12.2-26** for morning and evening peak hours, respectively. Under Existing (2015) conditions, the proposed Project would not result in significant impacts at the 23 freeway mainline segments during the morning and/or evening peak hours. Additionally, the proposed Project would not result in significant impacts to HOV facilities, on- or off-ramps, or freeway arterial intersections.

2024 Future Without Project compared to 2024 Future With Project

The freeway mainline segment analysis for the 2024 Future With Project scenario is shown in **Table 4.12.2-27** and **Table 4.12.2-28** for morning and evening peak hours, respectively. Under the 2024 Future With Project scenario, the proposed Project would not result in significant impacts at any of the 23 freeway mainline segments during the morning and/or evening peak hours. Additionally, the proposed Project would not result in significant impacts to HOV facilities, on- or off-ramps, or freeway arterial intersections.

2035 Future Without Project compared to 2035 Future With Project

The freeway mainline segment analysis for the 2035 Future With Project scenario is shown in **Table 4.12.2-29** and **Table 4.12.2-30** for morning and evening peak hours, respectively. Under the 2035 Future With Project scenario, the proposed Project would result in significant (and cumulatively considerable) impacts at one freeway mainline segment during the evening peak hour: I-405 Freeway at La Cienega Boulevard. The Project would not result in significant traffic impacts at 22 of the 23 freeway mainline segments during either the morning or evening peak hour. The proposed Project would not result in significant impacts to HOV facilities, on- or off-ramps, or freeway arterial intersections.

[Draft]

Table 4.12.2-22: CMP Analysis - Baseline (2015) Compared to 2015 With Project

		2015 BASELINE				2015 WITH PROJECT				SIGNIFICANT IMPACT?	
		a.m.		p.m.		a.m.		p.m.			
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	p.m.
12	Lincoln Boulevard and Venice Boulevard	0.871	D	0.840	D	0.872	D	0.839	D	---	---
14	Lincoln Boulevard and SR-90 Ramps	0.665	B	0.608	B	0.658	B	0.609	B	---	---
22	Lincoln Boulevard and Manchester Avenue	0.856	D	0.669	B	0.858	D	0.670	B	---	---
24	Centinela Avenue and Venice Boulevard	0.928	E	0.804	D	0.93	E	0.805	D	---	---
44	Overland Avenue and Venice Boulevard	0.841	D	0.819	D	0.841	D	0.819	D	---	---
61	Sepulveda Boulevard and Manchester Avenue	0.715	C	0.808	D	0.708	C	0.789	C	---	---
64	Sepulveda Boulevard and Lincoln Boulevard	0.601	B	0.620	B	0.613	B	0.621	B	---	---
70	Sepulveda Boulevard and El Segundo Boulevard	0.815	D	0.967	E	0.817	D	0.967	E	---	---
71	Sepulveda Boulevard and Rosecrans Avenue	0.937	E	1.001	F	0.937	E	1.003	F	---	---
108	La Cienega Boulevard and Jefferson Boulevard	0.912	E	0.931	E	0.915	E	0.931	E	---	---
110	La Cienega Boulevard and Stocker Street	1.080	F	1.089	F	1.076	F	1.088	F	---	---
114	La Cienega Boulevard and Centinela Avenue	0.930	E	1.040	F	0.923	E	1.029	F	---	---
145	La Brea Avenue and Manchester Boulevard	0.792	C	0.746	C	0.789	C	0.749	C	---	---
162	Crenshaw Boulevard and Manchester Avenue	0.946	E	0.992	E	0.942	E	0.993	E	---	---

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

[Draft]

Table 4.12.2-23: CMP Analysis - 2024 Future With Project Compared to 2024 Future Without Project

		2024 FUTURE WITHOUT PROJECT				2024 FUTURE WITH PROJECT				SIGNIFICANT IMPACT?	
		a.m.		p.m.		a.m.		p.m.			
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	p.m.
12	Lincoln Boulevard and Venice Boulevard	0.931	E	0.915	E	0.934	E	0.911	E	---	---
14	Lincoln Boulevard and SR-90 Ramps	0.666	B	0.667	B	0.669	B	0.664	B	---	---
22	Lincoln Boulevard and Manchester Avenue	0.859	D	0.781	C	0.866	D	0.777	C	---	---
24	Centinela Avenue and Venice Boulevard	0.961	E	0.891	D	0.961	E	0.891	D	---	---
44	Overland Avenue and Venice Boulevard	0.885	D	0.923	E	0.885	D	0.923	E	---	---
61	Sepulveda Boulevard and Manchester Avenue	0.736	C	0.917	E	0.733	C	0.901	E	---	---
64	Sepulveda Boulevard and Lincoln Boulevard	0.645	B	0.692	B	0.659	B	0.688	B	---	---
70	Sepulveda Boulevard and El Segundo Boulevard	0.840	D	1.036	F	0.844	D	1.033	F	---	---
71	Sepulveda Boulevard and Rosecrans Avenue	1.046	F	1.055	F	1.044	F	1.052	F	---	---
108	La Cienega Boulevard and Jefferson Boulevard	0.967	E	1.016	F	0.964	E	1.018	F	---	---
110	La Cienega Boulevard and Stocker Street	1.138	F	1.182	F	1.136	F	1.178	F	---	---
114	La Cienega Boulevard and Centinela Avenue	0.970	E	1.115	F	0.962	E	1.104	F	---	---
145	La Brea Avenue and Manchester Boulevard	0.834	D	0.866	D	0.836	D	0.866	D	---	---
162	Crenshaw Boulevard and Manchester Avenue	1.015	F	1.110	F	1.012	F	1.109	F	---	---

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

[Draft]

Table 4.12.2-24: CMP Analysis - 2035 Future With Project Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT				2035 FUTURE WITH PROJECT				SIGNIFICANT IMPACT?	
		a.m.		p.m.		a.m.		p.m.			
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	p.m.
12	Lincoln Boulevard and Venice Boulevard	0.966	E	0.973	E	0.966	E	0.973	E	---	---
14	Lincoln Boulevard and SR-90 Ramps	0.689	B	0.686	B	0.691	B	0.682	B	---	---
22	Lincoln Boulevard and Manchester Avenue	0.815	D	0.850	D	0.821	D	0.850	D	---	---
24	Centinela Avenue and Venice Boulevard	0.995	E	0.955	E	0.995	E	0.956	E	---	---
44	Overland Avenue and Venice Boulevard	0.910	E	0.949	E	0.910	E	0.950	E	---	---
61	Sepulveda Boulevard and Manchester Avenue	0.752	C	0.961	E	0.750	C	0.937	E	---	---
64	Sepulveda Boulevard and Lincoln Boulevard	0.685	B	0.715	C	0.706	C	0.719	C	---	---
70	Sepulveda Boulevard and El Segundo Boulevard	0.848	D	1.050	F	0.850	D	1.049	F	---	---
71	Sepulveda Boulevard and Rosecrans Avenue	1.056	F	1.068	F	1.053	F	1.067	F	---	---
108	La Cienega Boulevard and Jefferson Boulevard	1.000	E	1.052	F	0.996	E	1.053	F	---	---
110	La Cienega Boulevard and Stocker Street	1.156	F	1.244	F	1.152	F	1.240	F	---	---
114	La Cienega Boulevard and Centinela Avenue	0.985	E	1.149	F	0.981	E	1.141	F	---	---
145	La Brea Avenue and Manchester Boulevard	0.863	D	0.911	E	0.870	D	0.925	E	---	---
162	Crenshaw Boulevard and Manchester Avenue	1.055	F	1.145	F	1.054	F	1.151	F	---	---

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-25 (1 of 2): Freeway Segment Analysis - Baseline (2015) Compared to 2015 With Project (a.m. peak hour)

					2015 BASELINE					2015 WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	7,262	25.8	C	1654	0.827	7,261	25.8	C	1654	0.827	0.000	No
		27.81	SB	5	8,390	31.2	D	1911	0.956	8,387	31.2	D	1910	0.955	-0.001	No
2.	I-405 at Culver Boulevard	27.35	NB	5	7,831	28.4	D	1784	0.892	7,830	28.4	D	1784	0.892	0.000	No
		27.35	SB	5	8,390	31.2	D	1911	0.956	8,394	31.2	D	1912	0.956	0.000	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	7,853	28.5	D	1789	0.895	7,851	28.4	D	1788	0.894	-0.001	No
		26.84	SB	5	8,412	31.3	D	1916	0.958	8,420	31.3	D	1918	0.959	0.001	No
4.	I-405 North of SR-90	26.15	NB	5	6,529	22.9	C	1487	0.744	6,528	22.9	C	1487	0.744	0.000	No
		26.15	SB	5	8,718	33.0	D	1986	0.993	8,741	33.2	D	1991	0.996	0.003	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,569	30.2	D	1870	0.935	6,566	30.2	D	1869	0.935	0.000	No
		26.00	SB	4	10,853	126.1	F	3090	1.545	10,876	128.2	F	3097	1.549	0.004	No
6.	I-405 at Centinela Avenue	25.41	NB	4	7,568	37.9	E	2155	1.078	7,560	37.8	E	2153	1.077	-0.001	No
		25.41	SB	5	9,743	40.0	E	2219	1.110	9,733	39.9	E	2217	1.109	-0.001	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,112	34.1	D	2025	1.013	7,101	34.0	D	2022	1.011	-0.002	No
		24.90	SB	4	9,368	63.1	F	2667	1.334	9,376	63.4	F	2670	1.335	0.001	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	7,594	38.1	E	2162	1.081	7,607	38.2	E	2166	1.083	0.002	No
		24.25	SB	4	6,823	31.9	D	1943	0.972	6,830	32.0	D	1945	0.973	0.001	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	7,772	39.8	E	2213	1.107	7,784	39.9	E	2216	1.108	0.001	No
		23.61	SB	4	8,146	43.7	E	2319	1.160	8,159	43.9	E	2323	1.162	0.002	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	6,956	32.9	D	1981	0.991	6,925	32.7	D	1972	0.986	-0.005	No
		23.29	SB	4	9,991	80.4	F	2845	1.423	9,997	80.5	F	2846	1.423	0.000	No
11.	I-405 at Century Boulevard	22.68	NB	4	7,943	41.5	E	2262	1.131	7,892	41.0	E	2247	1.124	-0.007	No
		22.00	SB	4	9,404	64.0	F	2678	1.339	9,360	63.0	F	2665	1.333	-0.006	No
12.	I-405 South of I-105	20.6	NB	4	6,424	29.3	D	1829	0.915	6,411	29.2	D	1825	0.913	-0.002	No
		20.6	SB	4	6,340	28.8	D	1805	0.903	6,367	29.0	D	1813	0.907	0.004	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	10,541	104.7	F	3001	1.501	10,538	104.5	F	3000	1.500	-0.001	No
		19.57	SB	4	9,594	68.6	F	2732	1.366	9,582	68.2	F	2728	1.364	-0.002	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,616	49.8	F	2453	1.227	8,615	49.8	F	2453	1.227	0.000	No
		19.16	SB	4	7,709	39.2	E	2195	1.098	7,707	39.1	E	2194	1.097	-0.001	No

[Draft]

Table 4.12.2-25 (2 of 2): Freeway Segment Analysis - Baseline (2015) Compared to 2015 With Project (a.m. peak hour)

					2015 BASELINE					2015 WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,092	24.0	C	1553	0.777	4,005	23.5	C	1520	0.760	-0.017	No
		R0.90	WB	3	5,408	34.8	D	2053	1.027	5,394	34.7	D	2048	1.024	-0.003	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,240	45.8	F	2369	1.185	6,113	43.8	E	2321	1.161	-0.024	No
		R1.30	WB	3	7,160	67.3	F	2718	1.359	7,030	63.3	F	2669	1.335	-0.024	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,029	17.7	B	1150	0.575	2,883	16.8	B	1094	0.547	-0.028	No
		R1.80	WB	3	6,323	47.2	F	2400	1.200	6,260	46.1	F	2376	1.188	-0.012	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,447	20.1	C	1309	0.655	3,472	20.3	C	1318	0.659	0.004	No
		R2.60	WB	3	4,724	28.5	D	1793	0.897	4,615	27.7	D	1752	0.876	-0.021	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,382	34.5	D	2043	1.022	5,408	34.8	D	2053	1.027	0.005	No
		R3.30	WB	3	6,278	46.5	F	2383	1.192	6,223	45.5	F	2362	1.181	-0.011	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	6,245	45.9	F	2371	1.186	6,234	45.7	F	2367	1.184	-0.002	No
		R4.00	WB	3	7,884	103.1	F	2993	1.497	7,870	102.2	F	2988	1.494	-0.003	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	6,857	32.2	D	1952	0.976	6,858	32.2	D	1953	0.977	0.001	No
		R5.50	WB	4	7,123	34.1	D	2028	1.014	7,110	34.0	D	2024	1.012	-0.002	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,516	24.3	C	1335	0.668	3,504	24.2	C	1330	0.665	-0.003	No
		1.24	WB	3	2,595	17.9	B	985	0.493	2,545	17.6	B	966	0.483	-0.010	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,156	21.8	C	1198	0.599	3,145	21.7	C	1194	0.597	-0.002	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,644	13.7	B	753	0.377	2,639	13.7	B	751	0.376	-0.001	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-26 (1 of 2): Freeway Segment Analysis - Baseline (2015) Compared to 2015 With Project (p.m. peak hour)

					2015 BASELINE					2015 WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	7,898	28.7	D	1799	0.900	7,894	28.7	D	1798	0.899	-0.001	No
		27.81	SB	5	6,849	24.1	C	1560	0.780	6,858	24.2	C	1562	0.781	0.001	No
2.	I-405 at Culver Boulevard	27.35	NB	5	7,732	27.9	D	1761	0.881	7,731	27.9	D	1761	0.881	0.000	No
		27.35	SB	5	6,849	24.1	C	1560	0.780	6,854	24.2	C	1561	0.781	0.001	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	7,711	27.8	D	1756	0.878	7,707	27.8	D	1755	0.878	0.000	No
		26.84	SB	5	6,722	23.6	C	1531	0.766	6,717	23.6	C	1530	0.765	-0.001	No
4.	I-405 North of SR-90	26.15	NB	5	6,721	23.6	C	1531	0.766	6,713	23.6	C	1529	0.765	-0.001	No
		26.15	SB	5	7,233	25.7	C	1648	0.824	7,257	25.8	C	1653	0.827	0.003	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,561	30.2	D	1868	0.934	6,558	30.2	D	1867	0.934	0.000	No
		26.00	SB	4	8,852	53.4	F	2520	1.260	8,876	53.6	F	2527	1.264	0.004	No
6.	I-405 at Centinela Avenue	25.41	NB	4	7,536	37.6	E	2146	1.073	7,520	37.4	E	2141	1.071	-0.002	No
		25.41	SB	5	8,643	32.6	D	1969	0.985	8,638	32.6	D	1968	0.984	-0.001	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,451	36.8	E	2121	1.061	7,448	36.8	E	2121	1.061	0.000	No
		24.90	SB	4	7,969	41.8	E	2269	1.135	7,971	41.8	E	2270	1.135	0.000	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	8,533	48.6	F	2430	1.215	8,555	48.9	F	2436	1.218	0.003	No
		24.25	SB	4	7,227	35.0	D	2058	1.029	7,216	34.9	D	2055	1.028	-0.001	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	8,856	53.5	F	2522	1.261	8,873	53.7	F	2526	1.263	0.002	No
		23.61	SB	4	7,500	37.2	E	2135	1.068	7,451	36.8	E	2121	1.061	-0.007	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	7,879	40.8	E	2243	1.122	7,864	40.7	E	2239	1.120	-0.002	No
		23.29	SB	4	7,777	39.8	E	2214	1.107	7,720	39.3	E	2198	1.099	-0.008	No
11.	I-405 at Century Boulevard	22.68	NB	4	9,087	57.5	F	2587	1.294	9,086	57.5	F	2587	1.294	0.000	No
		22.00	SB	4	7,815	40.2	E	2225	1.113	7,751	39.6	E	2207	1.104	-0.009	No
12.	I-405 South of I-105	20.6	NB	4	6,903	32.5	D	1965	0.983	6,941	32.8	D	1976	0.988	0.005	No
		20.6	SB	4	5,483	24.2	C	1561	0.781	5,517	24.3	C	1571	0.786	0.005	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	10,728	116.8	F	3055	1.528	10,721	116.3	F	3053	1.527	-0.001	No
		19.57	SB	4	9,095	57.7	F	2590	1.295	9,083	57.4	F	2586	1.293	-0.002	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	7,953	41.6	E	2264	1.132	7,965	41.8	E	2268	1.134	0.002	No
		19.16	SB	4	7,056	33.6	D	2009	1.005	7,055	33.6	D	2009	1.005	0.000	No

[Draft]

Table 4.12.2-26 (2 of 2): Freeway Segment Analysis - Baseline (2015) Compared to 2015 With Project (p.m. peak hour)

					2015 BASELINE					2015 WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,190	24.7	C	1591	0.796	4,121	24.2	C	1564	0.782	-0.014	No
		R0.90	WB	3	3,058	17.9	B	1161	0.581	3,050	17.8	B	1158	0.579	-0.002	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,414	48.9	F	2435	1.218	6,329	47.4	F	2403	1.202	-0.016	No
		R1.30	WB	3	3,480	20.3	C	1321	0.661	3,338	19.5	C	1267	0.634	-0.027	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,614	21.1	C	1372	0.686	3,544	20.7	C	1345	0.673	-0.013	No
		R1.80	WB	3	4,786	29.1	D	1817	0.909	4,711	28.4	D	1788	0.894	-0.015	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,737	21.8	C	1419	0.710	3,808	22.3	C	1446	0.723	0.013	No
		R2.60	WB	3	2,919	17.0	B	1108	0.554	2,783	16.3	B	1057	0.529	-0.025	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	4,610	27.7	D	1750	0.875	4,679	28.2	D	1776	0.888	0.013	No
		R3.30	WB	3	5,066	31.5	D	1923	0.962	5,009	31.0	D	1902	0.951	-0.011	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	6,714	55.1	F	2549	1.275	6,716	55.1	F	2550	1.275	0.000	No
		R4.00	WB	3	7,104	65.5	F	2697	1.349	7,075	64.6	F	2686	1.343	-0.006	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,097	33.9	D	2021	1.011	7,094	33.9	D	2020	1.010	-0.001	No
		R5.50	WB	4	6,859	32.2	D	1953	0.977	6,823	31.9	D	1943	0.972	-0.005	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,424	23.6	C	1300	0.650	3,403	23.5	C	1292	0.646	-0.004	No
		1.24	WB	3	4,711	32.5	D	1788	0.894	4,657	32.1	D	1768	0.884	-0.010	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	2,844	19.6	C	1080	0.540	2,820	19.5	C	1071	0.536	-0.004	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,448	12.7	B	697	0.349	2,410	12.5	B	686	0.343	-0.006	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-27 (1 of 2): Freeway Segment Analysis - 2024 Future With Project Compared to 2024 Future Without Project (a.m. peak hour)

					2024 FUTURE WITHOUT PROJECT					2024 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	7,262	25.8	C	1654	0.827	7,270	25.8	C	1656	0.828	0.001	No
		27.81	SB	5	8,806	33.5	D	2006	1.003	8,805	33.5	D	2006	1.003	0.000	No
2.	I-405 at Culver Boulevard	27.35	NB	5	7,831	28.4	D	1784	0.892	7,839	28.4	D	1786	0.893	0.001	No
		27.35	SB	5	8,842	33.8	D	2014	1.007	8,842	33.8	D	2014	1.007	0.000	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	7,853	28.5	D	1789	0.895	7,859	28.5	D	1790	0.895	0.000	No
		26.84	SB	5	8,913	34.2	D	2030	1.015	8,913	34.2	D	2030	1.015	0.000	No
4.	I-405 North of SR-90	26.15	NB	5	6,529	22.9	C	1487	0.744	6,538	22.9	C	1489	0.745	0.001	No
		26.15	SB	5	9,045	35.0	E	2060	1.030	9,053	35.1	E	2062	1.031	0.001	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,569	30.2	D	1870	0.935	6,576	30.3	D	1872	0.936	0.001	No
		26.00	SB	4	11,180	159.8	F	3183	1.592	11,188	160.7	F	3185	1.593	0.001	No
6.	I-405 at Centinela Avenue	25.41	NB	4	7,568	37.9	E	2155	1.078	7,554	37.7	E	2151	1.076	-0.002	No
		25.41	SB	5	10,185	43.8	E	2320	1.160	10,170	43.7	E	2317	1.159	-0.001	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,112	34.1	D	2025	1.013	7,099	33.9	D	2021	1.011	-0.002	No
		24.90	SB	4	9,760	73.1	F	2779	1.390	9,771	73.4	F	2782	1.391	0.001	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	7,594	38.1	E	2162	1.081	7,615	38.3	E	2168	1.084	0.003	No
		24.25	SB	4	7,295	35.5	E	2077	1.039	7,297	35.5	E	2078	1.039	0.000	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	7,772	39.8	E	2213	1.107	7,792	40.0	E	2219	1.110	0.003	No
		23.61	SB	4	8,584	49.3	F	2444	1.222	8,600	49.6	F	2449	1.225	0.003	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	6,956	32.9	D	1981	0.991	6,921	32.6	D	1971	0.986	-0.005	No
		23.29	SB	4	10,450	99.7	F	2975	1.488	10,458	100.3	F	2978	1.489	0.001	No
11.	I-405 at Century Boulevard	22.68	NB	4	7,943	41.5	E	2262	1.131	7,922	41.3	E	2256	1.128	-0.003	No
		22.00	SB	4	9,722	72.0	F	2768	1.384	9,687	71.0	F	2758	1.379	-0.005	No
12.	I-405 South of I-105	20.6	NB	4	6,426	29.3	D	1830	0.915	6,402	29.2	D	1823	0.912	-0.003	No
		20.6	SB	4	6,668	30.9	D	1899	0.950	6,693	31.1	D	1906	0.953	0.003	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	10,605	108.5	F	3019	1.510	10,599	108.3	F	3018	1.509	-0.001	No
		19.57	SB	4	9,862	76.1	F	2808	1.404	9,884	76.8	F	2814	1.407	0.003	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,703	51.1	F	2478	1.239	8,696	51.0	F	2476	1.238	-0.001	No
		19.16	SB	4	7,908	41.2	E	2252	1.126	7,919	41.3	E	2255	1.128	0.002	No

[Draft]

Table 4.12.2-27 (2 of 2): Freeway Segment Analysis - 2024 Future With Project Compared to 2024 Future Without Project (a.m. peak hour)

					2024 FUTURE WITHOUT PROJECT					2024 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,136	24.3	C	1570	0.785	4,057	23.8	C	1540	0.770	-0.015	No
		R0.90	WB	3	5,604	37.0	E	2127	1.064	5,596	36.9	E	2124	1.062	-0.002	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,272	46.4	F	2381	1.191	6,146	44.3	E	2333	1.167	-0.024	No
		R1.30	WB	3	7,533	82.2	F	2860	1.430	7,403	76.3	F	2810	1.405	-0.025	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,056	17.8	B	1160	0.580	2,916	17.0	B	1107	0.554	-0.026	No
		R1.80	WB	3	6,656	53.8	F	2527	1.264	6,576	52.0	F	2496	1.248	-0.016	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,563	20.8	C	1353	0.677	3,526	20.6	C	1339	0.670	-0.007	No
		R2.60	WB	3	5,156	32.3	D	1957	0.979	4,992	30.8	D	1895	0.948	-0.031	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,535	36.2	E	2101	1.051	5,497	35.8	E	2087	1.044	-0.007	No
		R3.30	WB	3	6,628	53.1	F	2516	1.258	6,543	51.4	F	2484	1.242	-0.016	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	6,419	49.0	F	2437	1.219	6,404	48.7	F	2431	1.216	-0.003	No
		R4.00	WB	3	8,205	133.7	F	3115	1.558	8,144	126.7	F	3092	1.546	-0.012	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	6,960	32.9	D	1982	0.991	6,965	33.0	D	1983	0.992	0.001	No
		R5.50	WB	4	7,396	36.4	E	2106	1.053	7,358	36.0	E	2095	1.048	-0.005	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,801	26.2	D	1443	0.722	3,783	26.1	D	1436	0.718	-0.004	No
		1.24	WB	3	2,730	18.8	C	1036	0.518	2,683	18.5	C	1019	0.510	-0.008	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,367	23.2	C	1278	0.639	3,356	23.2	C	1274	0.637	-0.002	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,788	14.4	B	794	0.397	2,788	14.4	B	794	0.397	0.000	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-28 (1 of 2): Freeway Segment Analysis - 2024 Future With Project Compared to 2024 Future Without Project (p.m. peak hour)

					2024 FUTURE WITHOUT PROJECT					2024 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	8,407	31.3	D	1915	0.958	8,380	31.1	D	1909	0.955	-0.003	No
		27.81	SB	5	7,141	25.3	C	1627	0.814	7,135	25.3	C	1625	0.813	-0.001	No
2.	I-405 at Culver Boulevard	27.35	NB	5	8,270	30.5	D	1884	0.942	8,250	30.4	D	1879	0.940	-0.002	No
		27.35	SB	5	7,116	25.2	C	1621	0.811	7,105	25.2	C	1618	0.809	-0.002	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	8,300	30.7	D	1891	0.946	8,277	30.6	D	1885	0.943	-0.003	No
		26.84	SB	5	6,980	24.7	C	1590	0.795	6,964	24.6	C	1586	0.793	-0.002	No
4.	I-405 North of SR-90	26.15	NB	5	7,135	25.3	C	1625	0.813	7,123	25.2	C	1622	0.811	-0.002	No
		26.15	SB	5	7,383	26.3	D	1682	0.841	7,387	26.4	D	1683	0.842	0.001	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,923	32.6	D	1971	0.986	6,918	32.6	D	1970	0.985	-0.001	No
		26.00	SB	4	9,002	55.9	F	2563	1.282	9,006	56.0	F	2564	1.282	0.000	No
6.	I-405 at Centinela Avenue	25.41	NB	4	8,021	42.4	E	2284	1.142	7,991	42.0	E	2275	1.138	-0.004	No
		25.41	SB	5	8,847	33.8	D	2015	1.008	8,806	33.5	D	2006	1.003	-0.005	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,836	40.4	E	2231	1.116	7,816	40.2	E	2225	1.113	-0.003	No
		24.90	SB	4	8,120	43.5	E	2312	1.156	8,097	43.2	E	2305	1.153	-0.003	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	8,840	53.2	F	2517	1.259	8,888	54.0	F	2531	1.266	0.007	No
		24.25	SB	4	7,492	37.2	E	2133	1.067	7,479	37.0	E	2129	1.065	-0.002	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	9,124	58.2	F	2598	1.299	9,181	59.3	F	2614	1.307	0.008	No
		23.61	SB	4	7,717	39.2	E	2197	1.099	7,631	38.4	E	2173	1.087	-0.012	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	8,147	43.8	E	2320	1.160	8,177	44.1	E	2328	1.164	0.004	No
		23.29	SB	4	8,023	42.4	E	2284	1.142	7,928	41.3	E	2257	1.129	-0.013	No
11.	I-405 at Century Boulevard	22.68	NB	4	9,429	64.6	F	2685	1.343	9,390	63.7	F	2674	1.337	-0.006	No
		22.00	SB	4	8,062	42.8	E	2295	1.148	7,982	41.9	E	2273	1.137	-0.011	No
12.	I-405 South of I-105	20.6	NB	4	7,200	34.7	D	2050	1.025	7,277	35.4	E	2072	1.036	0.011	No
		20.6	SB	4	5,674	25.1	C	1616	0.808	5,649	25.0	C	1608	0.804	-0.004	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	11,019	141.2	F	3137	1.569	10,992	138.7	F	3130	1.565	-0.004	No
		19.57	SB	4	9,437	64.7	F	2687	1.344	9,448	65.0	F	2690	1.345	0.001	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,234	44.8	E	2344	1.172	8,217	44.6	E	2340	1.170	-0.002	No
		19.16	SB	4	7,400	36.4	E	2107	1.054	7,410	36.5	E	2110	1.055	0.001	No

[Draft]

Table 4.12.2-28 (2 of 2): Freeway Segment Analysis - 2024 Future With Project Compared to 2024 Future Without Project (p.m. peak hour)

					2024 FUTURE WITHOUT PROJECT					2024 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,461	26.6	D	1694	0.847	4,406	26.2	D	1673	0.837	-0.010	No
		R0.90	WB	3	3,095	18.1	C	1175	0.588	3,092	18.1	C	1174	0.587	-0.001	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,777	56.6	F	2573	1.287	6,691	54.5	F	2540	1.270	-0.017	No
		R1.30	WB	3	3,736	21.8	C	1418	0.709	3,594	21.0	C	1364	0.682	-0.027	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,891	22.8	C	1477	0.739	3,855	22.5	C	1463	0.732	-0.007	No
		R1.80	WB	3	5,049	31.3	D	1917	0.959	4,966	30.6	D	1885	0.943	-0.016	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,965	23.2	C	1505	0.753	4,069	23.9	C	1545	0.773	0.020	No
		R2.60	WB	3	3,392	19.8	C	1288	0.644	3,221	18.8	C	1223	0.612	-0.032	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	4,926	30.2	D	1870	0.935	5,027	31.1	D	1908	0.954	0.019	No
		R3.30	WB	3	5,456	35.3	E	2071	1.036	5,352	34.2	D	2032	1.016	-0.020	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	7,073	64.6	F	2685	1.343	7,085	65.0	F	2690	1.345	0.002	No
		R4.00	WB	3	7,391	75.9	F	2806	1.403	7,325	73.3	F	2781	1.391	-0.012	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,496	37.2	E	2134	1.067	7,496	37.2	E	2134	1.067	0.000	No
		R5.50	WB	4	7,112	34.1	D	2025	1.013	7,044	33.5	D	2006	1.003	-0.010	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,608	24.9	C	1370	0.685	3,573	24.7	C	1356	0.678	-0.007	No
		1.24	WB	3	5,013	34.8	D	1903	0.952	4,964	34.4	D	1884	0.942	-0.010	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,032	20.9	C	1151	0.576	2,990	20.6	C	1135	0.568	-0.008	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,684	13.9	B	764	0.382	2,664	13.8	B	759	0.380	-0.002	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-29 (1 of 2): Freeway Segment Analysis - 2035 Future With Project Compared to 2035 Future Without Project (a.m. peak hour)

					2035 FUTURE WITHOUT PROJECT					2035 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	7,262	25.8	C	1654	0.827	7,259	25.8	C	1653	0.827	0.000	No
		27.81	SB	5	9,016	34.9	D	2054	1.027	8,999	34.7	D	2050	1.025	-0.002	No
2.	I-405 at Culver Boulevard	27.35	NB	5	7,831	28.4	D	1784	0.892	7,823	28.3	D	1782	0.891	-0.001	No
		27.35	SB	5	9,069	35.2	E	2066	1.033	9,044	35.0	D	2060	1.030	-0.003	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	7,853	28.5	D	1789	0.895	7,844	28.4	D	1787	0.894	-0.001	No
		26.84	SB	5	9,185	35.9	E	2092	1.046	9,165	35.8	E	2088	1.044	-0.002	No
4.	I-405 North of SR-90	26.15	NB	5	6,529	22.9	C	1487	0.744	6,521	22.9	C	1485	0.743	-0.001	No
		26.15	SB	5	9,274	36.5	E	2112	1.056	9,260	36.4	E	2109	1.055	-0.001	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,569	30.2	D	1870	0.935	6,559	30.2	D	1867	0.934	-0.001	No
		26.00	SB	4	11,409	196.0	F	3248	1.624	11,395	193.3	F	3244	1.622	-0.002	No
6.	I-405 at Centinela Avenue	25.41	NB	4	7,568	37.9	E	2155	1.078	7,545	37.6	E	2148	1.074	-0.004	No
		25.41	SB	5	10,499	46.8	F	2391	1.196	10,461	46.5	F	2383	1.192	-0.004	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,112	34.1	D	2025	1.013	7,089	33.9	D	2018	1.009	-0.004	No
		24.90	SB	4	10,042	82.1	F	2859	1.430	10,023	81.5	F	2854	1.427	-0.003	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	7,594	38.1	E	2162	1.081	7,621	38.3	E	2170	1.085	0.004	No
		24.25	SB	4	7,564	37.8	E	2154	1.077	7,548	37.7	E	2149	1.075	-0.002	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	7,772	39.8	E	2213	1.107	7,801	40.1	E	2221	1.111	0.004	No
		23.61	SB	4	8,825	53.0	F	2513	1.257	8,823	52.9	F	2512	1.256	-0.001	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	6,956	32.9	D	1981	0.991	6,920	32.6	D	1970	0.985	-0.006	No
		23.29	SB	4	10,698	114.6	F	3046	1.523	10,692	114.1	F	3044	1.522	-0.001	No
11.	I-405 at Century Boulevard	22.68	NB	4	7,943	41.5	E	2262	1.131	7,918	41.2	E	2254	1.127	-0.004	No
		22.00	SB	4	9,934	78.4	F	2828	1.414	9,883	76.8	F	2814	1.407	-0.007	No
12.	I-405 South of I-105	20.6	NB	4	6,424	29.3	D	1829	0.915	6,389	29.1	D	1819	0.910	-0.005	No
		20.6	SB	4	6,842	32.1	D	1948	0.974	6,857	32.2	D	1952	0.976	0.002	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	10,606	108.7	F	3020	1.510	10,574	106.8	F	3011	1.506	-0.004	No
		19.57	SB	4	10,033	81.9	F	2857	1.429	10,035	81.9	F	2857	1.429	0.000	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,692	50.9	F	2475	1.238	8,666	50.5	F	2467	1.234	-0.004	No
		19.16	SB	4	8,060	42.8	E	2295	1.148	8,047	42.6	E	2291	1.146	-0.002	No

Table 4.12.2-29 (2 of 2): Freeway Segment Analysis - 2035 Future With Project Compared to 2035 Future Without Project (a.m. peak hour)

					2035 FUTURE WITHOUT PROJECT					2035 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,189	24.7	C	1590	0.795	4,107	24.1	C	1559	0.780	-0.015	No
		R0.90	WB	3	5,656	37.6	E	2147	1.074	5,652	37.6	E	2146	1.073	-0.001	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,349	47.7	F	2410	1.205	6,207	45.3	F	2356	1.178	-0.027	No
		R1.30	WB	3	7,650	88.2	F	2904	1.452	7,525	81.9	F	2857	1.429	-0.023	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,131	18.3	C	1189	0.595	2,990	17.5	B	1135	0.568	-0.027	No
		R1.80	WB	3	6,708	55.0	F	2547	1.274	6,673	54.1	F	2533	1.267	-0.007	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,603	21.0	C	1368	0.684	3,607	21.1	C	1369	0.685	0.001	No
		R2.60	WB	3	5,274	33.4	D	2002	1.001	5,160	32.3	D	1959	0.980	-0.021	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,628	37.3	E	2137	1.069	5,628	37.3	E	2137	1.069	0.000	No
		R3.30	WB	3	6,735	55.6	F	2557	1.279	6,674	54.2	F	2534	1.267	-0.012	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	6,549	51.5	F	2486	1.243	6,551	51.5	F	2487	1.244	0.001	No
		R4.00	WB	3	8,289	144.9	F	3147	1.574	8,242	138.4	F	3129	1.565	-0.009	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,092	33.9	D	2019	1.010	7,097	33.9	D	2021	1.011	0.001	No
		R5.50	WB	4	7,469	37.0	E	2127	1.064	7,428	36.6	E	2115	1.058	-0.006	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,903	26.9	D	1482	0.741	3,895	26.9	D	1479	0.740	-0.001	No
		1.24	WB	3	2,775	19.1	C	1053	0.527	2,731	18.9	C	1037	0.519	-0.008	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,443	23.8	C	1307	0.654	3,435	23.7	C	1304	0.652	-0.002	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,801	14.5	B	798	0.399	2,801	14.5	B	798	0.399	0.000	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-30 (1 of 2): Freeway Segment Analysis - 2035 Future With Project Compared to 2035 Future Without Project (p.m. peak hour)

					2035 FUTURE WITHOUT PROJECT					2035 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	8,651	32.6	D	1971	0.986	8,648	32.6	D	1970	0.985	-0.001	No
		27.81	SB	5	7,247	25.8	C	1651	0.826	7,212	25.6	C	1643	0.822	-0.004	No
2.	I-405 at Culver Boulevard	27.35	NB	5	8,527	31.9	D	1942	0.971	8,521	31.9	D	1941	0.971	0.000	No
		27.35	SB	5	7,205	25.6	C	1641	0.821	7,173	25.4	C	1634	0.817	-0.004	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	8,583	32.2	D	1955	0.978	8,572	32.2	D	1953	0.977	-0.001	No
		26.84	SB	5	7,074	25.0	C	1611	0.806	7,043	24.9	C	1604	0.802	-0.004	No
4.	I-405 North of SR-90	26.15	NB	5	7,338	26.1	D	1671	0.836	7,345	26.2	D	1673	0.837	0.001	No
		26.15	SB	5	7,374	26.3	D	1680	0.840	7,364	26.2	D	1677	0.839	-0.001	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	7,112	34.1	D	2025	1.013	7,123	34.1	D	2028	1.014	0.001	No
		26.00	SB	4	8,993	55.8	F	2561	1.281	8,983	55.6	F	2558	1.279	-0.002	No
6.	I-405 at Centinela Avenue	25.41	NB	4	8,311	45.7	F	2366	1.183	8,301	45.6	F	2363	1.182	-0.001	No
		25.41	SB	5	8,844	33.8	D	2014	1.007	8,774	33.4	D	1999	1.000	-0.007	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	8,082	43.0	E	2301	1.151	8,075	42.9	E	2299	1.150	-0.001	No
		24.90	SB	4	8,091	43.1	E	2304	1.152	8,041	42.6	E	2289	1.145	-0.007	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	9,016	56.2	F	2567	1.284	9,083	57.4	F	2586	1.293	0.009	No
		24.25	SB	4	7,492	37.2	E	2133	1.067	7,462	36.9	E	2125	1.063	-0.004	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	9,282	61.3	F	2643	1.322	9,370	63.2	F	2668	1.334	0.012	**Yes**
		23.61	SB	4	7,708	39.2	E	2195	1.098	7,603	38.2	E	2165	1.083	-0.015	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	8,305	45.7	F	2365	1.183	8,358	46.3	F	2380	1.190	0.007	No
		23.29	SB	4	8,047	42.6	E	2291	1.146	7,955	41.6	E	2265	1.133	-0.013	No
11.	I-405 at Century Boulevard	22.68	NB	4	9,653	70.0	F	2748	1.374	9,631	69.5	F	2742	1.371	-0.003	No
		22.00	SB	4	8,113	43.4	E	2310	1.155	8,090	43.1	E	2303	1.152	-0.003	No
12.	I-405 South of I-105	20.6	NB	4	7,349	35.9	E	2092	1.046	7,397	36.4	E	2106	1.053	0.007	No
		20.6	SB	4	5,743	25.5	C	1635	0.818	5,742	25.5	C	1635	0.818	0.000	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	11,137	154.5	F	3171	1.586	11,090	149.1	F	3158	1.579	-0.007	No
		19.57	SB	4	9,504	66.3	F	2706	1.353	9,540	67.2	F	2716	1.358	0.005	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,353	46.2	F	2378	1.189	8,317	45.8	F	2368	1.184	-0.005	No
		19.16	SB	4	7,449	36.8	E	2121	1.061	7,478	37.0	E	2129	1.065	0.004	No

Table 4.12.2-30 (2 of 2): Freeway Segment Analysis - 2035 Future With Project Compared to 2035 Future Without Project (p.m. peak hour)

					2035 FUTURE WITHOUT PROJECT					2035 FUTURE WITH PROJECT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,563	27.3	D	1732	0.866	4,504	26.9	D	1710	0.855	-0.011	No
		R0.90	WB	3	3,135	18.3	C	1190	0.595	3,154	18.4	C	1197	0.599	0.004	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,894	59.5	F	2617	1.309	6,824	57.7	F	2591	1.296	-0.013	No
		R1.30	WB	3	3,857	22.5	C	1464	0.732	3,722	21.7	C	1413	0.707	-0.025	No
17.	I-105 at Imperial Highway	R1.80	EB	3	4,001	23.4	C	1519	0.760	3,965	23.2	C	1505	0.753	-0.007	No
		R1.80	WB	3	5,131	32.1	D	1948	0.974	5,057	31.4	D	1920	0.960	-0.014	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	4,041	23.7	C	1534	0.767	4,163	24.5	C	1580	0.790	0.023	No
		R2.60	WB	3	3,458	20.2	C	1313	0.657	3,315	19.4	C	1258	0.629	-0.028	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,001	30.9	D	1899	0.950	5,110	31.9	D	1940	0.970	0.020	No
		R3.30	WB	3	5,545	36.3	E	2105	1.053	5,436	35.1	E	2064	1.032	-0.021	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	7,191	68.4	F	2730	1.365	7,238	70.0	F	2748	1.374	0.009	No
		R4.00	WB	3	7,512	81.2	F	2852	1.426	7,440	77.9	F	2824	1.412	-0.014	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,608	38.2	E	2166	1.083	7,640	38.5	E	2175	1.088	0.005	No
		R5.50	WB	4	7,235	35.0	E	2060	1.030	7,160	34.4	D	2039	1.020	-0.010	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,677	25.4	C	1396	0.698	3,648	25.2	C	1385	0.693	-0.005	No
		1.24	WB	3	5,164	36.1	E	1960	0.980	5,098	35.5	E	1935	0.968	-0.012	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,089	21.3	C	1173	0.587	3,049	21.0	C	1157	0.579	-0.008	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,836	14.7	B	807	0.404	2,821	14.6	B	803	0.402	-0.002	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Parking Analysis

As identified in Table 2-14, Section 2.5.24 of the *Description of the Proposed Project,* the proposed Project would eliminate approximately 200 street parking spaces primarily around the areas where the ITF West, APM MSF, and roadway improvements would be constructed. Although this would be a permanent loss of 200 spaces in this area, the ITF West would provide approximately 8,000 parking spaces and the ITF East would provide approximately 8,300 parking spaces, greatly offsetting the loss of on-street parking. Therefore, impacts to off-Airport parking would be less than significant.

Transit Analysis

Given that the Project consists of roadway and transportation improvements and construction of facilities that would facilitate movement at passengers at LAX (aside from potential future related development), the Project would not generate any additional new trips. In fact, the Project would reduce the number of trips on the street system[20] under Baseline (2015) With Project, Future (2024) With Project and Future (2035) With Project conditions. The proposed Project would improve connections to the regional transit system, which may encourage passengers and employees to utilize transit rather than other modes of traffic. Therefore, impacts to transit would be less than significant.

Bicycle and Pedestrian Analysis

The proposed Project consists of roadway and transportation improvements and construction of facilities that would facilitate movement at passengers at LAX; the Project would not generate any additional new trips. The proposed Project would provide additional pedestrian facilities, bike paths, and bike facilities for utilization by visitors and employees. Therefore, impacts to bicycle and pedestrian facilities would be less than significant. Also, see Section 4.8.5.1.4 for a discussion of how the prosed Project would be consistent with Mobility Plan 2035 bicycle path maps.

4.12.2.7.2 LAX Landside Access Modernization Program Potential Future Related Development

Intersection Analysis

The analysis discussed below provides a program-level analysis of the potential future related development components. Further project-level environmental review under CEQA will be required in the future before any of these components can be implemented by LAWA and/or independent developers as projects are identified for implementation.

The intersection impacts for a.m., p.m., and midday peaks of the 2035 Future With Project and Potential Future Related Development scenario as compared to the 2035 Future Without Project scenario are shown in **Table 4.12.2-31**. A summary of the number of intersections operating at each LOS is shown in **Table 4.12.2-32**.

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[20] Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)

[Draft]

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Table 4.12.2-31 (1 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
1	Ocean Avenue/Via Marina and Washington Boulevard	0.718	C	---	---	0.920	E	0.716	C	---	---	0.919	E	---	---	---
2	Vista del Mar/Vista del Mar Lane and Culver Boulevard	0.827	D	---	---	0.788	C	0.825	D	---	---	0.774	C	---	---	---
3	Vista del Mar and Imperial Highway	0.556	A	---	---	0.571	A	0.553	A	---	---	0.561	A	---	---	---
4	Vista del Mar and Grand Avenue	0.713	C	---	---	0.583	A	0.706	C	---	---	0.575	A	---	---	---
5	Highland Avenue/Vista del Mar and Rosecrans Avenue	0.983	E	---	---	0.941	E	0.981	E	---	---	0.931	E	---	---	---
6	Nicholson Street and Culver Boulevard	0.762	C	---	---	0.886	D	0.759	C	---	---	0.871	D	---	---	---
7	Pershing Drive and Manchester Avenue	0.483	A	---	---	0.510	A	0.481	A	---	---	0.509	A	---	---	---
8	Pershing Drive and Westchester Parkway	0.457	A	---	---	0.362	A	0.456	A	---	---	0.355	A	---	---	---
9	Pershing Drive and Imperial Highway	0.550	A	---	---	0.501	A	0.541	A	---	---	0.486	A	---	---	---
10	Culver Boulevard and Jefferson Boulevard	0.781	C	---	---	0.907	E	0.779	C	---	---	0.895	D	---	---	---
11	Main Street and Imperial Highway	0.694	B	---	---	0.633	B	0.702	C	---	---	0.632	B	---	---	---
12	Lincoln Boulevard and Venice Boulevard [1/]	0.966	E	---	---	0.973	E	0.967	E	---	---	0.975	E	---	---	---
13	Lincoln Boulevard and Washington Boulevard	0.942	E	---	---	0.892	D	0.943	E	---	---	0.892	D	---	---	---
14	Lincoln Boulevard and SR-90 Ramps [1/]	0.689	B	---	---	0.686	B	0.692	B	---	---	0.685	B	---	---	---
15	Lincoln Boulevard and Bali Way	0.607	B	---	---	0.646	B	0.610	B	---	---	0.647	B	---	---	---
16	Lincoln Boulevard and Mindanao Way	0.808	D	---	---	0.882	D	0.808	D	---	---	0.893	D	---	---	---
17	Lincoln Boulevard and Fiji Way	0.694	B	---	---	0.818	D	0.694	B	---	---	0.829	D	---	---	---
18	Lincoln Boulevard and Jefferson Boulevard	0.825	D	---	---	0.742	C	0.823	D	---	---	0.744	C	---	---	---
19	Lincoln Boulevard and Bluff Creek Drive	0.683	B	---	---	0.551	A	0.692	B	---	---	0.557	A	---	---	---
20	Lincoln Boulevard and Loyola Marymount University Drive	0.739	C	---	---	0.677	B	0.746	C	---	---	0.682	B	---	---	---
21	Lincoln Boulevard and 83rd Street	1.020	F	---	---	0.791	C	1.028	F	---	---	0.800	D	---	---	---
22	Lincoln Boulevard and Manchester Avenue [1/]	0.815	D	0.702	C	0.850	D	0.822	D	0.704	C	0.856	D	---	---	---
23	Lincoln Boulevard and La Tijera Boulevard	0.419	A	0.400	A	0.430	A	0.420	A	0.411	A	0.477	A	---	---	---
24	Centinela Avenue and Venice Boulevard [1/]	0.995	E	---	---	0.955	E	0.995	E	---	---	0.957	E	---	---	---
25	Centinela Avenue and Washington Place	0.891	D	---	---	0.987	E	0.892	D	---	---	0.988	E	---	---	---
26	Centinela Avenue and Washington Boulevard	0.924	E	---	---	1.041	F	0.925	E	---	---	1.043	F	---	---	---
27	Centinela Avenue and Culver Boulevard	1.023	F	---	---	1.127	F	1.026	F	---	---	1.128	F	---	---	---
28	Centinela Avenue and Sandford/SR-90 Westbound Ramps	0.604	B	---	---	0.517	A	0.605	B	---	---	0.526	A	---	---	---
29	Centinela Avenue and SR-90 Eastbound On-/Off-Ramps	0.759	C	---	---	0.513	A	0.760	C	---	---	0.518	A	---	---	---
30	Centinela Avenue and Jefferson Boulevard	1.043	F	---	---	0.833	D	1.025	F	---	---	0.824	D	---	---	---
31	Inglewood Boulevard-Centinela Avenue and Jefferson Boulevard	0.799	C	---	---	0.887	D	0.807	D	---	---	0.896	D	---	---	---
32	Sawtelle Boulevard and Matteson Street/I-405 Southbound Ramps	0.902	E	---	---	0.992	E	0.903	E	---	---	0.992	E	---	---	---
33	Sawtelle Boulevard and Washington Place	0.631	B	---	---	0.720	C	0.632	B	---	---	0.723	C	---	---	---

Table 4.12.2-31 (2 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
34	Sawtelle Boulevard and Washington Boulevard	0.729	C	---	---	0.811	D	0.730	C	---	---	0.811	D	---	---	---
35	Sawtelle Boulevard and Culver Boulevard	0.821	D	---	---	0.976	E	0.822	D	---	---	0.977	E	---	---	---
36	I-405 Southbound Ramps and Jefferson Boulevard	0.685	B	---	---	0.592	A	0.676	B	---	---	0.588	A	---	---	---
37	I-405 Northbound Ramps and Jefferson Boulevard	0.970	E	---	---	0.794	C	0.970	E	---	---	0.798	C	---	---	---
38	Slauson Avenue and Jefferson Boulevard	0.479	A	---	---	0.528	A	0.482	A	---	---	0.529	A	---	---	---
39	Sepulveda Boulevard and I-405 Northbound On-/Off-Ramps	0.785	C	---	---	1.005	F	0.785	C	---	---	1.007	F	---	---	---
40	Sepulveda Boulevard and Washington Place	0.912	E	---	---	0.920	E	0.913	E	---	---	0.921	E	---	---	---
41	Sepulveda Boulevard and Washington Boulevard	0.830	D	---	---	0.886	D	0.833	D	---	---	0.887	D	---	---	---
42	Sepulveda Boulevard and Culver Boulevard	0.956	E	---	---	0.941	E	0.958	E	---	---	0.941	E	---	---	---
43	Sepulveda Boulevard and Braddock Drive	0.731	C	---	---	0.744	C	0.731	C	---	---	0.744	C	---	---	---
44	Overland Avenue and Venice Boulevard [1/]	0.910	E	---	---	0.949	E	0.911	E	---	---	0.951	E	---	---	---
45	Overland Avenue and Washington Boulevard	0.912	E	---	---	1.078	F	0.913	E	---	---	1.080	F	---	---	---
46	Overland Avenue and Culver Boulevard	1.018	F	---	---	0.982	E	1.019	F	---	---	0.983	E	---	---	---
47	Duquesne Avenue and Washington Boulevard	0.623	B	---	---	0.742	C	0.623	B	---	---	0.742	C	---	---	---
48	Duquesne Avenue and Culver Boulevard	0.699	B	---	---	0.737	C	0.699	B	---	---	0.737	C	---	---	---
49	Culver Boulevard and Washington Boulevard-Irving Place	0.724	C	---	---	0.733	C	0.724	C	---	---	0.733	C	---	---	---
50	Duquesne Avenue and Jefferson Boulevard	0.873	D	---	---	0.846	D	0.876	D	---	---	0.847	D	---	---	---
51	Overland Avenue and Jefferson Boulevard	0.844	D	---	---	0.910	E	0.846	D	---	---	0.910	E	---	---	---
52	Sepulveda Boulevard and Jefferson Boulevard	0.617	B	---	---	0.647	B	0.617	B	---	---	0.648	B	---	---	---
53	Sepulveda Boulevard and Sawtelle Boulevard	0.702	C	---	---	0.812	D	0.704	C	---	---	0.815	D	---	---	---
54	Sepulveda Boulevard and Jefferson Boulevard and Playa Street	0.908	E	---	---	0.806	D	0.911	E	---	---	0.810	D	---	---	---
55	Sepulveda Boulevard and Slauson Avenue	0.733	C	---	---	0.755	C	0.737	C	---	---	0.758	C	---	---	---
56	Sepulveda Boulevard and Centinela Avenue	0.872	D	---	---	1.082	F	0.866	D	---	---	1.085	F	---	---	---
57	Sepulveda Boulevard and Howard Hughes Parkway	0.808	D	---	---	0.694	B	0.809	D	---	---	0.692	B	---	---	---
58	Sepulveda Boulevard and 76th Street-77th Street	0.788	C	---	---	0.690	B	0.801	D	---	---	0.700	B	---	---	---
59	Sepulveda Boulevard and 79th Street-80th Street	0.714	C	---	---	0.595	A	0.731	C	---	---	0.627	B	---	---	---
60	Sepulveda Boulevard and 83rd Street	0.589	A	---	---	0.567	A	0.614	B	---	---	0.571	A	---	---	---
61	Sepulveda Boulevard and Manchester Avenue [1/]	0.752	C	0.739	C	0.961	E	0.751	C	0.723	C	0.940	E	---	---	---
62	Sepulveda Boulevard and La Tijera Boulevard	0.589	A	0.651	B	0.733	C	0.615	B	0.650	B	0.739	C	---	---	---
63	Sepulveda Boulevard and Westchester Parkway	0.812	D	0.965	E	0.971	E	0.837	D	0.968	E	0.920	E	Yes	---	---
64	Sepulveda Boulevard and Lincoln Boulevard [1/]	0.685	B	0.648	B	0.715	C	0.707	C	0.633	B	0.721	C	---	---	---
65	Sepulveda Boulevard and Century Boulevard	0.839	D	0.777	C	0.947	E	0.914	E	0.835	D	0.873	D	Yes	Yes	---
66	Sepulveda Boulevard and I-105 Westbound Ramps (n/o Imperial Highway)	1.104	F	1.025	F	1.001	F	1.065	F	0.978	E	0.965	E	---	---	---

Table 4.12.2-31 (3 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
67	Sepulveda Boulevard and Imperial Highway	0.792	C	0.647	B	0.940	E	0.735	C	0.659	B	0.895	D	---	---	---
68	Sepulveda Boulevard and Mariposa Avenue	0.888	D	---	---	0.823	D	0.889	D	---	---	0.829	D	---	---	---
69	Sepulveda Boulevard and Grand Avenue	1.146	F	---	---	0.984	E	1.150	F	---	---	0.989	E	---	---	---
70	Sepulveda Boulevard and El Segundo Boulevard [1/]	0.848	D	---	---	1.050	F	0.851	D	---	---	1.051	F	---	---	---
71	Sepulveda Boulevard and Rosecrans Avenue [1/]	1.056	F	---	---	1.068	F	1.054	F	---	---	1.068	F	---	---	---
72	SR-90 Westbound Ramps and Slauson Avenue	0.780	C	---	---	0.843	D	0.784	C	---	---	0.841	D	---	---	---
73	Buckingham Parkway and Slauson Avenue	0.858	D	---	---	0.831	D	0.856	D	---	---	0.828	D	---	---	---
74	I-405 Southbound Ramps and Howard Hughes Parkway	0.458	A	---	---	0.243	A	0.455	A	---	---	0.228	A	---	---	---
75	Sepulveda Eastway and Westchester Parkway	0.491	A	---	---	0.787	C	0.517	A	---	---	0.778	C	---	---	---
76	La Tijera Boulevard and Manchester Avenue	0.613	B	0.649	B	0.695	B	0.624	B	0.668	B	0.664	B	---	---	---
77	Jenny Avenue and Westchester Parkway	0.212	A	0.338	A	0.457	A	0.362	A	0.451	A	0.489	A	---	---	---
78	Avion Drive and Century Boulevard	0.515	A	0.572	A	0.640	B	0.485	A	0.475	A	0.548	A	---	---	---
79	La Tijera Boulevard and Airport Boulevard	0.619	B	0.621	B	0.725	C	0.642	B	0.602	B	0.720	C	---	---	---
80	Airport Boulevard and Manchester Avenue	0.682	B	0.761	C	0.832	D	0.718	C	0.683	B	0.750	C	---	---	---
81	Airport Boulevard and Arbor Vitae Street/Westchester Parkway	0.744	C	0.858	D	1.153	F	0.782	C	0.700	B	0.978	E	---	---	---
82	Airport Boulevard and 96th Street	0.341	A	0.553	A	0.580	A	0.488	A	0.512	A	0.584	A	---	---	---
83	Airport Boulevard and 98th Street	0.433	A	0.573	A	0.625	B	0.696	B	0.652	B	0.689	B	---	---	---
84	Airport Boulevard and Century Boulevard	0.672	B	0.800	C	0.725	C	0.658	B	0.687	B	0.733	C	---	---	---
85	Nash Street /I-105 Westbound Ramps and Imperial Highway	0.547	A	---	---	0.480	A	0.551	A	---	---	0.498	A	---	---	---
86	Nash Street and El Segundo Boulevard	0.646	B	---	---	0.721	C	0.642	B	---	---	0.708	C	---	---	---
87	Douglas Street and Imperial Highway	0.398	A	---	---	0.739	C	0.439	A	---	---	0.717	C	---	---	---
88	Douglas Street and El Segundo Boulevard	0.848	D	---	---	0.989	E	0.858	D	---	---	0.986	E	---	---	---
89	I-405 Northbound Ramps and La Tijera Boulevard	0.981	E	0.887	D	0.876	D	0.894	D	0.835	D	0.820	D	---	---	---
90	I-405 Southbound Ramps and La Tijera Boulevard	0.773	C	0.639	B	0.975	E	0.775	C	0.632	B	0.898	D	---	---	---
91	Bellanca Avenue and Century Boulevard	0.654	B	---	---	0.761	C	0.459	A	---	---	0.503	A	---	---	---
92	Aviation Boulevard/Florence Avenue and Manchester Avenue	0.795	C	0.843	D	0.895	D	0.718	C	0.747	C	0.730	C	---	---	---
93	Aviation Boulevard and Arbor Vitae Street	0.996	E	0.731	C	0.902	E	0.993	E	0.792	C	1.037	F	---	Yes	Yes
94	Aviation Boulevard and Century Boulevard	0.961	E	0.900	D	1.051	F	0.827	D	0.891	D	0.989	E	---	---	---
95	Aviation Boulevard and 104th Street	0.790	C	0.752	C	0.875	D	0.795	C	0.787	C	0.876	D	---	---	---
96	Aviation Boulevard and 111th Street	0.957	E	0.867	D	0.872	D	0.854	D	0.829	D	0.829	D	---	---	---
97	Aviation Boulevard and Imperial Highway	0.878	D	0.694	B	0.923	E	0.664	B	0.645	B	0.931	E	---	---	---
98	Aviation Boulevard and West 120th Street	0.905	E	---	---	0.968	E	0.874	D	---	---	0.945	E	---	---	---
99	Aviation Boulevard and El Segundo Boulevard	0.991	E	---	---	1.076	F	0.992	E	---	---	1.084	F	---	---	---

Table 4.12.2-31 (4 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
100	Aviation Boulevard and Rosecrans Avenue	1.013	F	---	---	1.013	F	1.012	F	---	---	1.016	F	---	---	---
101	Hindry Avenue and Manchester Boulevard	0.731	C	---	---	0.862	D	0.737	C	---	---	0.757	C	---	---	---
102	Hindry Avenue and Arbor Vitae Street [2/]	49.4s	E	16.5 s	C	24.1s	C	0.678	B	0.402	A	0.667	B	---	---	---
103	Concourse Way and Century Boulevard	0.337	A	---	---	0.528	A	0.611	B	---	---	0.688	B	---	---	---
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial Highway	0.838	D	0.440	A	0.713	C	0.824	D	0.594	A	0.789	C	---	---	Yes
105	La Tijera Boulevard and Centinela Avenue	0.891	D	---	---	0.997	E	0.891	D	---	---	0.977	E	---	---	---
106	Jefferson Boulevard and National Boulevard	1.023	F	---	---	0.927	E	1.024	F	---	---	0.924	E	---	---	---
107	Jefferson Boulevard and Higuera Street/Rodeo Road	0.742	C	---	---	0.798	C	0.742	C	---	---	0.798	C	---	---	---
108	La Cienega Boulevard and Jefferson Boulevard [1/]	1.000	E	---	---	1.052	F	0.999	E	---	---	1.056	F	---	---	---
109	La Cienega Boulevard and Rodeo Road	1.277	F	---	---	1.189	F	1.276	F	---	---	1.189	F	---	---	---
110	La Cienega Boulevard and Stocker Street [1/]	1.156	F	---	---	1.244	F	1.157	F	---	---	1.246	F	---	---	---
111	La Cienega Boulevard Southbound Ramps and Slauson Avenue	1.251	F	---	---	1.200	F	1.247	F	---	---	1.193	F	---	---	---
112	La Cienega Boulevard Northbound Ramps and Slauson Avenue	1.114	F	---	---	1.042	F	1.110	F	---	---	1.044	F	---	---	---
113	La Cienega Boulevard and La Tijera Boulevard	0.617	B	---	---	0.759	C	0.619	B	---	---	0.757	C	---	---	---
114	La Cienega Boulevard and Centinela Avenue [1/]	0.985	E	---	---	1.149	F	0.987	E	---	---	1.146	F	---	---	---
115	La Cienega Boulevard and Florence Avenue	0.826	D	1.022	F	1.162	F	0.860	D	1.048	F	1.228	F	---	Yes	Yes
116	La Cienega Boulevard and Manchester Boulevard	0.801	D	0.908	E	0.880	D	0.870	D	1.011	F	1.020	F	---	Yes	Yes
117	La Cienega Boulevard and Arbor Vitae Street	0.887	D	0.724	C	0.852	D	1.154	F	0.824	D	1.090	F	Yes	---	Yes
118	La Cienega Boulevard and I-405 Southbound Ramps (n/o Century Bl)	0.809	D	0.703	C	0.705	C	0.686	B	0.645	B	0.633	B	---	---	---
119	La Cienega Boulevard and Century Boulevard	0.985	E	0.813	D	1.088	F	1.037	F	0.877	D	1.184	F	Yes	Yes	Yes
120	La Cienega Boulevard and I-405 Southbound Ramps (s/o Century Bl)	0.385	A	---	---	0.381	A	0.339	A	---	---	0.412	A	---	---	---
121	La Cienega Boulevard and 104th Street	0.478	A	---	---	0.506	A	0.464	A	---	---	0.498	A	---	---	---
122	La Cienega Boulevard and Lennox Boulevard	0.583	A	---	---	0.836	D	0.629	B	---	---	0.854	D	---	---	---
123	La Cienega Boulevard and 111th Street	0.433	A	---	---	0.453	A	0.446	A	---	---	0.464	A	---	---	---
124	La Cienega Boulevard and I-405 Southbound Ramps (n/o Imperial Hwy)	0.565	A	---	---	0.424	A	0.605	B	---	---	0.430	A	---	---	---
125	La Cienega Boulevard and Imperial Highway	0.532	A	0.341	A	0.899	D	0.601	B	0.360	A	0.907	E	---	---	---
126	La Cienega Boulevard and West 120th Street	0.848	D	---	---	0.999	E	0.813	D	---	---	1.007	F	---	---	---
127	La Cienega Boulevard and El Segundo Boulevard	0.748	C	---	---	0.918	E	0.746	C	---	---	0.926	E	---	---	---
128	Hindry Avenue and Rosecrans Avenue	0.725	C	---	---	0.812	D	0.722	C	---	---	0.817	D	---	---	---
129	I-405 Northbound Off-Ramp/Ash Avenue and Manchester Avenue	0.923	E	0.778	C	0.896	D	0.909	E	0.752	C	0.914	E	---	---	---
130	I-405 Northbound Ramps and Century Boulevard	0.993	E	0.761	C	0.890	D	1.019	F	0.763	C	0.930	E	Yes	---	---
131	I-405 Northbound Ramps (e/o La Cienega Bl) and Imperial Highway	0.653	B	---	---	0.832	D	0.692	B	---	---	0.818	D	---	---	---
132	I-405 Northbound Ramps and El Segundo Boulevard	0.801	D	---	---	0.818	D	0.813	D	---	---	0.814	D	---	---	---

Table 4.12.2-31 (5 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
133	I-405 Northbound Ramps and Rosecrans Avenue	0.900	D	---	---	0.898	D	0.898	D	---	---	0.898	D	---	---	---
134	Inglewood Avenue and Manchester Boulevard	0.804	D	---	---	0.887	D	0.801	D	---	---	0.907	E	---	---	---
135	Inglewood Avenue and Arbor Vitae Street	0.674	B	---	---	0.802	D	0.704	C	---	---	0.803	D	---	---	---
136	Inglewood Avenue and Century Boulevard	0.873	D	---	---	1.064	F	0.904	E	---	---	1.101	F	---	---	Yes
137	Inglewood Avenue and Lennox Boulevard	0.952	E	---	---	1.086	F	0.953	E	---	---	1.087	F	---	---	---
138	Inglewood Avenue and Imperial Highway	1.095	F	---	---	1.195	F	1.100	F	---	---	1.203	F	---	---	---
139	Inglewood Avenue and El Segundo Boulevard	0.879	D	---	---	1.007	F	0.897	D	---	---	1.011	F	---	---	---
140	Inglewood Avenue and Rosecrans Avenue	0.923	E	---	---	1.120	F	0.922	E	---	---	1.123	F	---	---	---
141	La Brea Avenue/Overhill Drive and Stocker Street	0.983	E	---	---	1.139	F	0.987	E	---	---	1.128	F	---	---	---
142	La Brea Avenue and Slauson Avenue	0.939	E	---	---	1.066	F	0.938	E	---	---	1.067	F	---	---	---
143	La Brea Avenue and Centinela Avenue	1.016	F	---	---	1.057	F	1.015	F	---	---	1.064	F	---	---	---
144	La Brea Avenue and Florence Avenue	0.923	E	---	---	1.127	F	0.940	E	---	---	1.131	F	---	---	---
145	La Brea Avenue and Manchester Boulevard 1/	0.863	D	---	---	0.911	E	0.870	D	---	---	0.925	E	---	---	---
146	La Brea Avenue and Arbor Vitae Street	0.626	B	---	---	0.805	D	0.625	B	---	---	0.812	D	---	---	---
147	La Brea Avenue/Hawthorne Boulevard and Century Boulevard	0.876	D	---	---	0.986	E	0.909	E	---	---	1.012	F	---	---	Yes
148	Hawthorne Boulevard and Lennox Boulevard	0.821	D	---	---	0.902	E	0.809	D	---	---	0.883	D	---	---	---
149	Hawthorne Boulevard and I-105 Westbound Ramps/111th Street	0.919	E	---	---	1.039	F	0.910	E	---	---	1.028	F	---	---	---
150	Hawthorne Boulevard and Imperial Avenue	0.861	D	---	---	1.037	F	0.849	D	---	---	1.041	F	---	---	---
151	Hawthorne Boulevard and 120th Street	0.669	B	---	---	0.833	D	0.673	B	---	---	0.851	D	---	---	---
152	Hawthorne Boulevard and El Segundo Boulevard	0.775	C	---	---	0.898	D	0.785	C	---	---	0.901	E	---	---	---
153	Hawthorne Boulevard and Rosecrans Avenue	0.755	C	---	---	0.922	E	0.754	C	---	---	0.927	E	---	---	---
154	I-105 Eastbound Ramps/Freeman Avenue and Imperial Highway	0.703	C	---	---	0.800	C	0.705	C	---	---	0.762	C	---	---	---
155	Prairie Avenue and Manchester Boulevard	0.983	E	---	---	1.069	F	0.983	E	---	---	1.074	F	---	---	---
156	Prairie Avenue and Arbor Vitae Street	0.816	D	---	---	0.901	E	0.818	D	---	---	0.895	D	---	---	---
157	Prairie Avenue and Century Boulevard	0.959	E	---	---	1.011	F	0.964	E	---	---	1.020	F	---	---	---
158	Prairie Avenue and Lennox Boulevard	0.712	C	---	---	0.720	C	0.710	C	---	---	0.721	C	---	---	---
159	Prairie Avenue and West 112th Street/I-105 Off-Ramp	0.811	D	---	---	0.767	C	0.831	D	---	---	0.775	C	---	---	---
160	Prairie Avenue and Imperial Highway	1.346	F	---	---	0.952	E	1.347	F	---	---	0.959	E	---	---	---
161	Prairie Avenue and El Segundo Boulevard	0.950	E	---	---	0.985	E	0.950	E	---	---	0.990	E	---	---	---
162	Crenshaw Boulevard and Manchester Avenue 1/	1.055	F	---	---	1.145	F	1.055	F	---	---	1.151	F	---	---	---
163	Crenshaw Boulevard and Century Boulevard	0.948	E	---	---	1.120	F	0.951	E	---	---	1.126	F	---	---	---
164	Crenshaw Boulevard and Imperial Highway	0.924	E	---	---	1.067	F	0.930	E	---	---	1.072	F	---	---	---
165	Western Avenue and Manchester Avenue	0.869	D	---	---	1.056	F	0.872	D	---	---	1.059	F	---	---	---

Table 4.12.2-31 (6 of 6): Intersection Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT						2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT								
		a.m.		midday		p.m.		a.m.		midday		p.m.		SIGNIFICANT IMPACT?		
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	m.d.	p.m.
166	Western Avenue and Imperial Highway	0.915	E	---	---	0.941	E	0.919	E	---	---	0.946	E	---	---	---
167	I-405 Northbound Ramps and Culver Boulevard	0.781	C	---	---	0.740	C	0.781	C	---	---	0.740	C	---	---	---
168	Walgrove Avenue and Washington Boulevard [2/]	***	F	---	---	***	F	***	F	---	---	***	F	---	---	---
169	Washington Boulevard and Washington Place at Wade Street	0.772	C	---	---	0.955	E	0.773	C	---	---	0.959	E	---	---	---
170	Inglewood Boulevard and Washington Boulevard	0.842	D	---	---	1.084	F	0.846	D	---	---	1.088	F	---	---	---
171	Sawtelle Boulevard and I-405 Southbound Ramp (s/o Washington Bl)	0.419	A	---	---	0.527	A	0.420	A	---	---	0.527	A	---	---	---
172	Washington Boulevard and Washington Place at Tilden Avenue	0.600	A	---	---	0.659	B	0.600	A	---	---	0.660	B	---	---	---
173	Overland Avenue and Sawtelle Boulevard [2/]	49.7s	E	---	---	63.6s	F	49.9 s	E	---	---	63.4 s	F	---	---	---
174	Canfield Avenue-Washington Boulevard (Ince Blvd) and Culver Boulevard	0.839	D	---	---	0.795	C	0.839	D	---	---	0.795	C	---	---	---
175	Ince Boulevard and Washington Boulevard	1.002	F	---	---	1.003	F	1.002	F	---	---	1.003	F	---	---	---
176	National Boulevard and Venice Boulevard	0.931	E	---	---	1.053	F	0.931	E	---	---	1.051	F	---	---	---
177	National Boulevard and Washington Boulevard	0.865	D	---	---	1.006	F	0.866	D	---	---	1.006	F	---	---	---
178	La Cienega Boulevard and Washington Boulevard	0.959	E	---	---	1.105	F	0.960	E	---	---	1.106	F	---	---	---
179	Centinela Avenue and Florence Avenue	0.934	E	---	---	0.902	E	0.938	E	---	---	0.904	E	---	---	---
180	Prairie Avenue and Florence Avenue	0.820	D	---	---	0.917	E	0.820	D	---	---	0.920	E	---	---	---
181	Van Ness Avenue and Manchester Avenue	1.013	F	---	---	1.024	F	1.013	F	---	---	1.032	F	---	---	---
182	Van Ness Avenue and Century Boulevard	0.752	C	---	---	0.823	D	0.756	C	---	---	0.826	D	---	---	---
183	Van Ness Avenue and Imperial Highway	0.903	E	---	---	0.945	E	0.909	E	---	---	0.950	E	---	---	---

NOTES:

--- = not available

1/ Los Angeles County Congestion Management Program (CMP) arterial monitoring location.

2/ Unsignalized intersection.

*** Indicates oversaturated conditions. Delay cannot be determined.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

[Draft]

Table 4.12.2-32: Intersection Level of Service Analysis – 2035 With Project and Potential Future Related Development

LEVEL OF SERVICE	AM PEAK HOUR	MIDDAY PEAK HOUR	PM PEAK HOUR
A	19	7	23
B	28	12	14
C	35	7	27
D	41	6	34
E	37	2	38
F	23	2	47
Total	183	36 [1/]	183
Total Number of Impacts	5	5	8
Total Individual Intersection Impacts		11	

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Under the 2035 Future With Project and Potential Future Related Development scenario, significant (and cumulatively considerable) impacts would occur at three intersections during the a.m. peak hour; at six intersections during the p.m. peak hour; and at two intersections during both the a.m. and p.m. peak hour, as follows:

- Sepulveda Boulevard and Westchester Parkway. Significant impact in the a.m. peak hour at LOS D
- Sepulveda Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS E
- Aviation Boulevard and Arbor Vitae Street. Significant impact in the p.m. peak hour at LOS F
- I-105 Freeway Ramps (east of Aviation Boulevard) and Imperial Highway. Significant impact in the p.m. peak hour at LOS C
- La Cienega Boulevard and Florence Avenue. Significant impact in the p.m. peak hour at LOS F
- La Cienega Boulevard and Manchester Boulevard. Significant impact in the p.m. peak hour at LOS F
- La Cienega Boulevard and Arbor Vitae Street. Significant impact in the a.m. peak hour at LOS F and in p.m. peak hour at LOS F
- La Cienega Boulevard and Century Boulevard. Significant impact in the a.m. peak hour at LOS F and in the p.m. peak hour at LOS F

- I-405 Freeway Northbound Ramps and Century Boulevard. Significant impact in the a.m. peak hour at LOS F
- Inglewood Avenue and Century Boulevard. Significant impact in the p.m. peak hour at LOS F
- La Brea Avenue/Hawthorne Boulevard and Century Boulevard. Significant impact in the p.m. peak hour at LOS F

Five intersections would be significantly impacted during the mid-day peak hour:

- Sepulveda Boulevard and Century Boulevard – Significant impact in MD Peak Hour at LOS D
- Aviation Boulevard and Arbor Vitae Street – Significant impact in MD Peak Hour at LOS C
- La Cienega Boulevard and Florence Avenue – Significant impact in MD Peak Hour at LOS F
- La Cienega Boulevard and Manchester Boulevard – Significant impact in MD Peak Hour at LOS F
- La Cienega Boulevard and Century Boulevard – Significant impact in MD Peak Hour at LOS D

The Project would not result in significant traffic impacts at the remaining 172 of the 183 study intersections during either the a.m. or p.m. peak hour, or the remaining 31 of the 36 study intersections for the midday peak hour.

The intersection analysis shows that the system-wide operations within the Study Area would remain largely unchanged during both peak hours. During the evening peak hour, it is worth noting that intersection operations at 22 of the 55 locations (40 percent) within the area of influence were improved compared to the 2035 Future Without Project. Impacted and improved intersections for the 2035 Future With Project scenario for the morning and evening peak hours are shown on **Figure 4.12.2-8** and **Figure 4.12.2-9**, respectively.

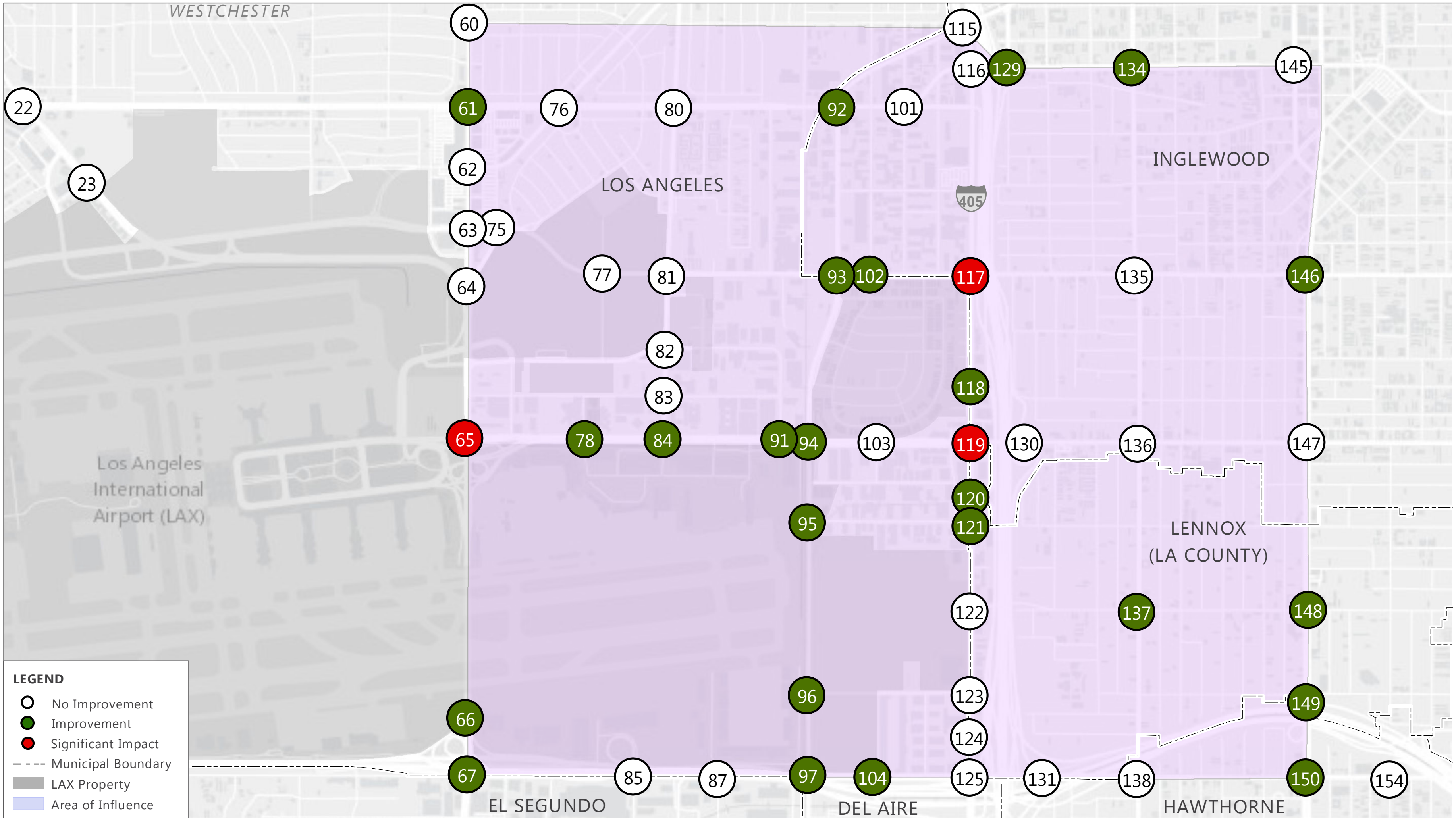

FIGURE 4.12.2-8

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH

0 2,400 ft

2035 Future With Project and Potential Future Related Development
a.m. Peak Hour Intersection Impacts

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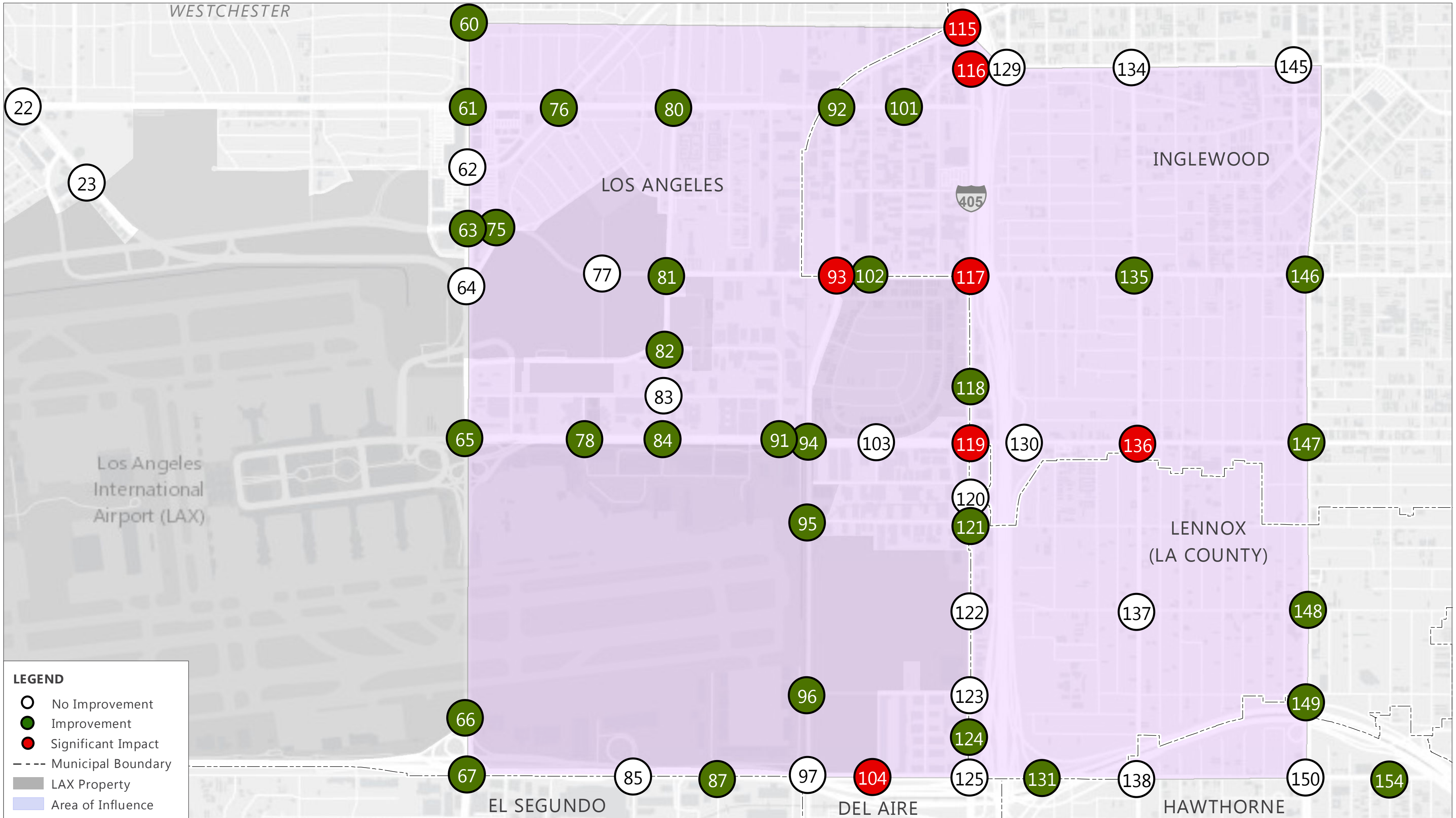

SOURCES: Los Angeles County, 2010, 2011 (city boundary, streets); LAX Airport Layout Plan, Ricondo & Associates, Inc., 2010 (runways, taxiways, terminal area, ariport property boundary); National Geographic World Map, ESRI Database, 2011.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH
0 2,400 ft

FIGURE 4.12.2-9

2035 Future With Project and Potential Future Related Development
p.m. Peak Hour Intersection Impacts

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Congestion Management Program Analysis

Table 4.12.2-33 summarizes the results of the LOS analysis at the analyzed CMP arterial locations for the 2035 Future With Project and Potential Future Related Development scenario. As indicated in the table, the proposed Project would not cause significant impacts at any of the CMP arterial monitoring locations under the 2035 Future With Project and Potential Future Related Development conditions.

Freeway Analysis (Cumulative Impacts)

The freeway mainline segment analysis for the 2035 Future With Project and Potential Future Related Development scenario is shown in **Table 4.12.2-34** and **Table 4.12.2-35** for morning and evening peak hours, respectively. Under the 2035 Future With Project and Potential Future Related Development scenario, the proposed Project would cause the density/capacity ration to exceed 0.10, which would result in significant (and cumulatively considerable) impacts at three freeway mainline segment during the evening peak hour:

- I-405 Freeway at La Tijera Boulevard
- I-405 Freeway at La Cienega Boulevard
- I-105 Freeway west of Crenshaw Boulevard

The Project would not result in significant traffic impacts at 20 of the 23 freeway mainline segments during either peak hour. The proposed Project would not result in significant impacts to HOV facilities, on- or off-ramps, or freeway arterial intersections.

Transit Analysis

The future potential related development would consist of a mixture of commercial and light industrial development, which would generate new trips. However, the proposed Project would improve connections to the regional transit system, which may encourage passengers and employees to utilize transit rather than other modes of traffic. As indicated in the Congestion Management Analysis, above, the potential future related development would not cause significant impacts at any of the CMP arterial monitoring locations under the 2035 Future With Project and Potential Future Related Development conditions. Therefore, impacts to transit would be less than significant.

Bicycle and Pedestrian Analysis

The future potential related development would consist of a mixture of commercial and light industrial development, which would generate new trips. The proposed Project would provide additional pedestrian facilities, bike paths, and bike facilities for utilization by visitors and employees. The potential future related development would be required to adhere to the LAX Design Guidelines which include provisions for streetscape, bike paths, and pedestrian access. Therefore, impacts to bicycle and pedestrian facilities would be less than significant.

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[Draft]

Table 4.12.2-33: CMP Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project

		2035 FUTURE WITHOUT PROJECT				2035 FUTURE WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT				SIGNIFICANT IMPACT?	
		a.m.		p.m.		a.m.		p.m.			
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	p.m.
12	Lincoln Boulevard and Venice Boulevard	0.966	E	0.973	E	0.967	E	0.975	E	---	---
14	Lincoln Boulevard and SR-90 Ramps	0.689	B	0.686	B	0.692	B	0.685	B	---	---
22	Lincoln Boulevard and Manchester Avenue	0.815	D	0.850	D	0.822	D	0.856	D	---	---
24	Centinela Avenue and Venice Boulevard	0.995	E	0.955	E	0.995	E	0.957	E	---	---
44	Overland Avenue and Venice Boulevard	0.910	E	0.949	E	0.911	E	0.951	E	---	---
61	Sepulveda Boulevard and Manchester Avenue	0.752	C	0.961	E	0.751	C	0.940	E	---	---
64	Sepulveda Boulevard and Lincoln Boulevard	0.685	B	0.715	C	0.707	C	0.721	C	---	---
70	Sepulveda Boulevard and El Segundo Boulevard	0.848	D	1.050	F	0.851	D	1.051	F	---	---
71	Sepulveda Boulevard and Rosecrans Avenue	1.056	F	1.068	F	1.054	F	1.068	F	---	---
108	La Cienega Boulevard and Jefferson Boulevard	1.000	E	1.052	F	0.999	E	1.056	F	---	---
110	La Cienega Boulevard and Stocker Street	1.156	F	1.244	F	1.157	F	1.246	F	---	---
114	La Cienega Boulevard and Centinela Avenue	0.985	E	1.149	F	0.987	E	1.146	F	---	---
145	La Brea Avenue and Manchester Boulevard	0.863	D	0.911	E	0.870	D	0.925	E	---	---
162	Crenshaw Boulevard and Manchester Avenue	1.055	F	1.145	F	1.055	F	1.151	F	---	---

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

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Table 4.12.2-34 (1 of 2): Freeway Segment Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project (a.m. peak hour)

					FUTURE 2035 WITHOUT PROJECT					FUTURE 2035 WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	7,262	25.8	C	1654	0.827	7,272	25.8	C	1656	0.828	0.001	No
		27.81	SB	5	9,016	34.9	D	2054	1.027	9,023	34.9	D	2055	1.028	0.001	No
2.	I-405 at Culver Boulevard	27.35	NB	5	7,831	28.4	D	1784	0.892	7,836	28.4	D	1785	0.893	0.001	No
		27.35	SB	5	9,069	35.2	E	2066	1.033	9,070	35.2	E	2066	1.033	0.000	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	7,853	28.5	D	1789	0.895	7,857	28.5	D	1790	0.895	0.000	No
		26.84	SB	5	9,185	35.9	E	2092	1.046	9,191	36.0	E	2094	1.047	0.001	No
4.	I-405 North of SR-90	26.15	NB	5	6,529	22.9	C	1487	0.744	6,534	22.9	C	1488	0.744	0.000	No
		26.15	SB	5	9,274	36.5	E	2112	1.056	9,287	36.6	E	2115	1.058	0.002	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	6,569	30.2	D	1870	0.935	6,572	30.2	D	1871	0.936	0.001	No
		26.00	SB	4	11,409	196.0	F	3248	1.624	11,422	198.7	F	3252	1.626	0.002	No
6.	I-405 at Centinela Avenue	25.41	NB	4	7,568	37.9	E	2155	1.078	7,558	37.8	E	2152	1.076	-0.002	No
		25.41	SB	5	10,499	46.8	F	2391	1.196	10,490	46.7	F	2389	1.195	-0.001	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	7,112	34.1	D	2025	1.013	7,103	34.0	D	2022	1.011	-0.002	No
		24.90	SB	4	10,042	82.1	F	2859	1.430	10,052	82.5	F	2862	1.431	0.001	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	7,594	38.1	E	2162	1.081	7,621	38.3	E	2170	1.085	0.004	No
		24.25	SB	4	7,564	37.8	E	2154	1.077	7,565	37.8	E	2154	1.077	0.000	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	7,772	39.8	E	2213	1.107	7,801	40.1	E	2221	1.111	0.004	No
		23.61	SB	4	8,825	53.0	F	2513	1.257	8,840	53.2	F	2517	1.259	0.002	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	6,956	32.9	D	1981	0.991	6,920	32.6	D	1970	0.985	-0.006	No
		23.29	SB	4	10,698	114.6	F	3046	1.523	10,710	115.3	F	3049	1.525	0.002	No
11.	I-405 at Century Boulevard	22.68	NB	4	7,943	41.5	E	2262	1.131	7,918	41.2	E	2254	1.127	-0.004	No
		22.00	SB	4	9,934	78.4	F	2828	1.414	9,900	77.3	F	2819	1.410	-0.004	No
12.	I-405 South of I-105	20.6	NB	4	6,424	29.3	D	1829	0.915	6,415	29.3	D	1826	0.913	-0.002	No
		20.6	SB	4	6,842	32.1	D	1948	0.974	6,876	32.3	D	1958	0.979	0.005	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	10,606	108.7	F	3020	1.510	10,599	108.3	F	3018	1.509	-0.001	No
		19.57	SB	4	10,033	81.9	F	2857	1.429	10,054	82.6	F	2863	1.432	0.003	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,692	50.9	F	2475	1.238	8,691	50.9	F	2475	1.238	0.000	No
		19.16	SB	4	8,060	42.8	E	2295	1.148	8,066	42.9	E	2297	1.149	0.001	No

Table 4.12.2-34 (2 of 2): Freeway Segment Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project (a.m. peak hour)

					FUTURE 2035 WITHOUT PROJECT					FUTURE 2035 WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,189	24.7	C	1590	0.795	4,107	24.1	C	1559	0.780	-0.015	No
		R0.90	WB	3	5,656	37.6	E	2147	1.074	5,652	37.6	E	2146	1.073	-0.001	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,349	47.7	F	2410	1.205	6,207	45.3	F	2356	1.178	-0.027	No
		R1.30	WB	3	7,650	88.2	F	2904	1.452	7,525	81.9	F	2857	1.429	-0.023	No
17.	I-105 at Imperial Highway	R1.80	EB	3	3,131	18.3	C	1189	0.595	2,991	17.5	B	1135	0.568	-0.027	No
		R1.80	WB	3	6,708	55.0	F	2547	1.274	6,675	54.2	F	2534	1.267	-0.007	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	3,603	21.0	C	1368	0.684	3,608	21.1	C	1370	0.685	0.001	No
		R2.60	WB	3	5,274	33.4	D	2002	1.001	5,162	32.4	D	1960	0.980	-0.021	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,628	37.3	E	2137	1.069	5,635	37.4	E	2139	1.070	0.001	No
		R3.30	WB	3	6,735	55.6	F	2557	1.279	6,688	54.5	F	2539	1.270	-0.009	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	6,549	51.5	F	2486	1.243	6,558	51.7	F	2490	1.245	0.002	No
		R4.00	WB	3	8,289	144.9	F	3147	1.574	8,256	140.1	F	3134	1.567	-0.007	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,092	33.9	D	2019	1.010	7,104	34.0	D	2023	1.012	0.002	No
		R5.50	WB	4	7,469	37.0	E	2127	1.064	7,441	36.7	E	2119	1.060	-0.004	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,903	26.9	D	1482	0.741	3,895	26.9	D	1479	0.740	-0.001	No
		1.24	WB	3	2,775	19.1	C	1053	0.527	2,731	18.9	C	1037	0.519	-0.008	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,443	23.8	C	1307	0.654	3,435	23.7	C	1304	0.652	-0.002	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,801	14.5	B	798	0.399	2,801	14.5	B	798	0.399	0.000	No

NOTES:

[a] Model estimated volume data.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-35 (1 of 2): Freeway Segment Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project (p.m. peak hour)

					FUTURE 2035 WITHOUT PROJECT					FUTURE 2035 WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
1.	I-405 South of Venice Boulevard	27.81	NB	5	8,651	32.6	D	1971	0.986	8,669	32.7	D	1975	0.988	0.002	No
		27.81	SB	5	7,247	25.8	C	1651	0.826	7,228	25.7	C	1646	0.823	-0.003	No
2.	I-405 at Culver Boulevard	27.35	NB	5	8,527	31.9	D	1942	0.971	8,543	32.0	D	1946	0.973	0.002	No
		27.35	SB	5	7,205	25.6	C	1641	0.821	7,190	25.5	C	1638	0.819	-0.002	No
3.	I-405 at Braddock Boulevard	26.84	NB	5	8,583	32.2	D	1955	0.978	8,594	32.3	D	1958	0.979	0.001	No
		26.84	SB	5	7,074	25.0	C	1611	0.806	7,060	25.0	C	1608	0.804	-0.002	No
4.	I-405 North of SR-90	26.15	NB	5	7,338	26.1	D	1671	0.836	7,367	26.3	D	1678	0.839	0.003	No
		26.15	SB	5	7,374	26.3	D	1680	0.840	7,381	26.3	D	1681	0.841	0.001	No
5.	I-405 at Jefferson Boulevard	26.00	NB	4	7,112	34.1	D	2025	1.013	7,145	34.3	D	2034	1.017	0.004	No
		26.00	SB	4	8,993	55.8	F	2561	1.281	9,000	55.9	F	2563	1.282	0.001	No
6.	I-405 at Centinela Avenue	25.41	NB	4	8,311	45.7	F	2366	1.183	8,323	45.9	F	2370	1.185	0.002	No
		25.41	SB	5	8,844	33.8	D	2014	1.007	8,793	33.5	D	2003	1.002	-0.005	No
7.	I-405 at Howard Hughes Parkway	25.10	NB	4	8,082	43.0	E	2301	1.151	8,098	43.2	E	2306	1.153	0.002	No
		24.90	SB	4	8,091	43.1	E	2304	1.152	8,060	42.8	E	2295	1.148	-0.004	No
8.	I-405 at La Tijera Boulevard	24.25	NB	4	9,016	56.2	F	2567	1.284	9,095	57.7	F	2590	1.295	0.011	**Yes**
		24.25	SB	4	7,492	37.2	E	2133	1.067	7,468	37.0	E	2126	1.063	-0.004	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	9,282	61.3	F	2643	1.322	9,371	63.2	F	2668	1.334	0.012	**Yes**
		23.61	SB	4	7,708	39.2	E	2195	1.098	7,609	38.2	E	2166	1.083	-0.015	No
10.	I-405 South of Manchester Avenue	23.36	NB	4	8,305	45.7	F	2365	1.183	8,359	46.3	F	2380	1.190	0.007	No
		23.29	SB	4	8,047	42.6	E	2291	1.146	7,962	41.7	E	2267	1.134	-0.012	No
11.	I-405 at Century Boulevard	22.68	NB	4	9,653	70.0	F	2748	1.374	9,631	69.5	F	2742	1.371	-0.003	No
		22.00	SB	4	8,113	43.4	E	2310	1.155	8,090	43.1	E	2303	1.152	-0.003	No
12.	I-405 South of I-105	20.6	NB	4	7,349	35.9	E	2092	1.046	7,417	36.5	E	2112	1.056	0.010	No
		20.6	SB	4	5,743	25.5	C	1635	0.818	5,764	25.6	C	1641	0.821	0.003	No
13.	I-405 South of El Segundo Boulevard	19.57	NB	4	11,137	154.5	F	3171	1.586	11,111	151.6	F	3164	1.582	-0.004	No
		19.57	SB	4	9,504	66.3	F	2706	1.353	9,564	67.8	F	2723	1.362	0.009	No
14.	I-405 at Rosecrans Avenue	19.16	NB	4	8,353	46.2	F	2378	1.189	8,338	46.1	F	2374	1.187	-0.002	No
		19.16	SB	4	7,449	36.8	E	2121	1.061	7,502	37.3	E	2136	1.068	0.007	No

Table 4.12.2-35 (2 of 2): Freeway Segment Analysis - 2035 Future With Project and Potential Future Related Development Compared to 2035 Future Without Project (p.m. peak hour)

					FUTURE 2035 WITHOUT PROJECT					FUTURE 2035 WITH PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
15.	I-105 at Hughes Way	R0.90	EB	3	4,563	27.3	D	1732	0.866	4,504	26.9	D	1710	0.855	-0.011	No
		R0.90	WB	3	3,135	18.3	C	1190	0.595	3,154	18.4	C	1197	0.599	0.004	No
16.	I-105 at Douglas Street	R1.30	EB	3	6,894	59.5	F	2617	1.309	6,824	57.7	F	2591	1.296	-0.013	No
		R1.30	WB	3	3,857	22.5	C	1464	0.732	3,722	21.7	C	1413	0.707	-0.025	No
17.	I-105 at Imperial Highway	R1.80	EB	3	4,001	23.4	C	1519	0.760	3,975	23.3	C	1509	0.755	-0.005	No
		R1.80	WB	3	5,131	32.1	D	1948	0.974	5,058	31.4	D	1920	0.960	-0.014	No
18.	I-105 West of Hawthorne Avenue	R2.82	EB	3	4,041	23.7	C	1534	0.767	4,172	24.6	C	1584	0.792	0.025	No
		R2.60	WB	3	3,458	20.2	C	1313	0.657	3,316	19.4	C	1259	0.630	-0.027	No
19.	I-105 West of Prairie Avenue	R3.10	EB	3	5,001	30.9	D	1899	0.950	5,124	32.0	D	1945	0.973	0.023	No
		R3.30	WB	3	5,545	36.3	E	2105	1.053	5,445	35.2	E	2067	1.034	-0.019	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	7,191	68.4	F	2730	1.365	7,252	70.5	F	2753	1.377	0.012	**Yes**
		R4.00	WB	3	7,512	81.2	F	2852	1.426	7,449	78.4	F	2828	1.414	-0.012	No
21.	I-105 West of Normandie Avenue	R5.50	EB	4	7,608	38.2	E	2166	1.083	7,654	38.6	E	2179	1.090	0.007	No
		R5.50	WB	4	7,235	35.0	E	2060	1.030	7,168	34.5	D	2041	1.021	-0.009	No
22.	SR-90 East of Ballona Creek	1.24	EB	3	3,677	25.4	C	1396	0.698	3,648	25.2	C	1385	0.693	-0.005	No
		1.24	WB	3	5,164	36.1	E	1960	0.980	5,098	35.5	E	1935	0.968	-0.012	No
23.	SR-90 at Centinela Avenue	1.61	EB	3	3,089	21.3	C	1173	0.587	3,049	21.0	C	1157	0.579	-0.008	No
	I-405 South of Venice Boulevard	1.61	WB	4	2,836	14.7	B	807	0.404	2,821	14.6	B	803	0.402	-0.002	No

NOTES:

[a] Model estimated volume data.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

4.12.2.7.3 Future Conditions with Event Day at Hollywood Park Stadium

A traffic impact analysis of an event day at Hollywood Park Stadium, which is under construction in Inglewood, east of the Airport and proposed Project facilities was conducted. The same analysis locations and project design features and parameters as those for typical commuter day conditions described above for the proposed Project were used in this analysis and evaluation.

The stadium event traffic analysis indicates that traffic associated with an event at the stadium would affect only the evening peak hours and not the morning peak hours on a weekday. Therefore, traffic impact analysis of the Project with a stadium event was conducted during the evening peak hours only. The morning peak hour traffic impacts would be the same with this scenario as those for the proposed Project with no event at the Hollywood Park Stadium. The analysis showed that the impacts of the proposed Project with the Event Day at Hollywood Park Stadium would be the same as the proposed Project without the Event Day at Hollywood Park Stadium. Appendix U of Appendix O contains the complete Event Day at Hollywood Park Stadium.

4.12.2.7.4 Future Conditions with Airport Metro Connector 96th Street Transit Station

A traffic impact analysis of the proposed Project with the proposed Airport Metro Connector (AMC) 96th Street Transit Station, which is proposed by Metro to be located on the southwest corner of Aviation Boulevard and Arbor Vitae Street, was conducted. The same analysis locations and project design features and parameters as those for typical commuter day conditions described above for the proposed Project were used in this analysis and evaluation. The primary traffic change associated with the AMC 96th Street Transit Station Project would be the shift of bus routes from the LAX City Bus Center and the Aviation/LAX transit center to the AMC 96th Street Transit Station multimodal facility. Currently, there are 13 Metro and municipal bus routes currently serving the LAX City Bus Center and/or the Aviation/LAX transit center that would be rerouted to the AMC 96th Street Transit Station site.

Utilizing current bus routing data from Metro and municipal agencies, the existing routes were modified to reach the AMC 96th Street Transit Station site in the most direct path available. Based on Metro's study for the AMC 96th Street Transit Station, the peak hour trip generation to the AMC 96th Street Transit Station was estimated to be 57 inbound trips and 61 outbound trips during the peak hours. Utilizing the AMC 96th Street Transit Station project trip assignments from Metro's study, these AMC 96th Street Transit Station trips were combined with the Future (2035) without Project and Future (2035) with Project peak hour traffic volumes. The analysis showed that the impacts of the proposed Project with the AMC 96th Street Transit Station would be the same as the proposed Project without the AMC 96th Street Transit Station. Appendix V of Appendix O contains the complete AMC 96th Street Transit Station traffic analysis.

4.12.2.7.5 Future Conditions with W. 98th Street Operating Options

A traffic impact analysis of the proposed operational options along W. 98th Street between Airport Boulevard and Bellanca Avenue was conducted. The proposed Project proposes to convert the W. 98th Street segment from Airport Boulevard to Bellanca Avenue into four travel lanes, two lanes in each direction. As part of the proposed Project, several W. 98th Street operational options were identified to accommodate on-street loading/unloading lanes. These options include:

- Option 1: Convert W. 98th Street segment from Airport Boulevard to Bellanca Avenue into three westbound-only lanes. The middle lane would be designated as a travel lane. The two outside lanes would be designated as loading areas and would allow for easier access to each site. One of the loading lanes could be used as a travel lane during peak hour traffic.
- Option 2: Convert W. 98th Street segment from Airport Boulevard to Bellanca Avenue into four lanes: one eastbound lane, one westbound lane, and two lanes designated for loading and site access on both sides of the street. The eastbound lane would be designated as a dynamic lane and would adjust to one-way traffic during peak hours.
- Option 3: Convert W. 98th Street segment from Airport Boulevard to Bellanca Avenue into four lanes: two westbound lanes, one eastbound lane, and one lane designated for loading and site access on the south side of the street during most of the day except the evening peak period when loading would be restricted. This loading lane would function as an additional eastbound lane in the evening peak period. It is also worth noting that a separate loading management area adjacent to Belford Avenue, south of W. 96th Street would be included as part of this option.

An evaluation of traffic flows in the vicinity of and along W. 98th Street was conducted for the three options noted above. The same Project design features and parameters as those for typical commuter day conditions described above for the proposed Project were used in this analysis. The analysis focused on traffic impacts at six intersections:

- Avion Drive and Century Boulevard
- Airport Boulevard and W. 96th Street
- Airport Boulevard and W. 98th Street
- Airport Boulevard and Century Boulevard
- Bellanca Avenue and Century Boulevard
- Aviation Boulevard and Century Boulevard

W. 98th Street Operating Option 1

Option 1 would provide westbound only access and designated loading areas on either side of the roadway. This option would provide dedicated loading and unloading areas on both sides of the street, avoiding loading/unloading activity in the central turn lane and crossing the street, as it occurs currently.

Under Option 1, W. 98th Street eastbound traffic would be diverted to eastbound W. 96th Street and Century Boulevard and would increase the traffic volumes at the six intersections. Additionally, businesses within this stretch of W. 98th Street would be forced to head westbound and circle around to W. 96th Street and/or Century Boulevard to head to points east resulting in circulation routes and recirculating traffic. Parking shuttle traffic would be diverted to eastbound W. 96th Street to access Wally Park and/or Century Boulevard to access the Parking Spot. The existing eight metered parking spaces on the south side of 98th Street near Bellanca Avenue would be removed as part of the option. Results of the traffic analysis for Option 1 include:

- Future (2024) with Project: Significant traffic impacts at 4 intersections – Airport Boulevard and W. 96th Street, Airport Boulevard and W. 98th Street, Airport Boulevard and Century Boulevard, and Bellanca Avenue and Century Boulevard. Additionally, many of the turning movements at these intersections would increase substantially under Option 1 with queues exceeding the available storage at turn pockets.
- Future (2035) with Project: Significant traffic impacts at 2 intersections - Airport Boulevard and W. 98th Street and Airport Boulevard and Century Boulevard. Additionally, many of the turning movements at these intersections would increase substantially under Option 1 with queues exceeding the available storage at turn pockets.
- Future (2035) with Project and Potential Future Related Development: Significant traffic impacts at 3 intersections – Airport Boulevard and W. 98th Street, Aviation Boulevard and Century Boulevard, and Bellanca Avenue and Century Boulevard. Additionally, many of the turning movements at these intersections would increase substantially under Option 1 with queues exceeding the available storage at turn pockets.

W. 98th Street Operating Option 2

Option 2 provides both westbound and eastbound traffic travel lanes with one lane in each direction throughout most of the day except during peak hour traffic. During the peak hours, the eastbound lane would be designated as a dynamic lane and would adjust to one-way traffic. Similar to Option 1, Option 2 would provide dedicated loading and unloading areas on both sides of the street, avoiding loading/unloading in the central turn lane and crossing the street as it occurs currently.

Under the westbound only configuration during the peak hours, W. 98th Street eastbound traffic would be diverted to eastbound W. 96th Street and Century Boulevard and would increase the traffic volume at the study intersections. Additionally, businesses within this stretch of W. 98th Street would be forced to head westbound and circle around to W. 96th Street and/or Century Boulevard to head to points east resulting in circulation routes and recirculating traffic. Parking shuttle traffic would be diverted to eastbound W. 96th Street to access Wally Park and/or Century Boulevard to access the Parking Spot. The existing eight metered parking spaces on the south side of W. 98th Street near Bellanca Avenue would be removed as part of this option. Results of the traffic analysis for Option 2 include:

- Future (2024) with Project: Significant traffic impacts at 4 intersections – Airport Boulevard and W. 96th Street, Airport Boulevard and W. 98th Street, Airport Boulevard and Century Boulevard, and Bellanca Avenue and Century Boulevard. Additionally, many of the turning movements at these intersections would increase substantially under Option 2 with queues exceeding the available storage at turn pockets.
- Future (2035) with Project: Significant traffic impacts at 2 intersections - Airport Boulevard and W. 98th Street and Aviation Boulevard and Century Boulevard. Additionally, many of the turning

movements at these intersections would increase substantially under Option 2 with queues exceeding the available storage at turn pockets.

- Future (2035) with Project and Potential Future Related Development: Significant traffic impacts at 3 intersections – Airport Boulevard and W. 98th Street, Aviation Boulevard and Century Boulevard, and Bellanca Avenue and Century Boulevard. Additionally, many of the turning movements at these intersections would increase substantially under Option 2 with queues exceeding the available storage at turn pockets.

W. 98th Street Operating Option 3

Option 3 provides two-way access with two lanes in the westbound direction and one lane in the eastbound direction and would provide dedicated loading and unloading areas on the south side of W. 98th Street 3. This loading lane would function as a dynamic lane (an additional eastbound lane) in the evening peak period, providing two lanes in the eastbound direction. A separate loading management area adjacent to Belford Avenue, south of W. 96th Street would be included as part of this option preserving truck access into Flying Food Group. The existing eight metered parking spaces on the south side of W. 98th Street near Bellanca Avenue would be removed as part of the option. Results of the traffic analysis for Option 3 include:

- Future (2024) with Project: Significant traffic impacts at 1 intersection – Airport Boulevard and Century Boulevard.
- Future (2035) with Project: No significant traffic impacts at any of the 6 intersections.
- Future (2035) with Project and Potential Future Related Development: No significant traffic impacts at any of the 6 intersections.

Options 1 and 2 would both result in additionally significantly impacted intersections, while Option 3 would result in similar conditions as the proposed Project. Appendix W of Appendix O contains the complete W. 98th Street Operating Options traffic analysis.

4.12.2.8 Cumulative Impacts

As discussed in Section 4.12.2.3, the traffic model developed for the off-Airport traffic analysis was based on the SCAG RTP 2012 Transportation Model and the City of Los Angeles' Westside Mobility Plan model. These models include regional growth projections, including housing and employment data, based on LADOT and SCAG growth projections for future horizon years. In addition, the model was updated to incorporate traffic data from 212 probable development projects in surrounding jurisdictions (see Table 3-2 in Chapter 3, *Overview of Project Setting)*. Therefore, the model includes background traffic volumes due to ambient area-wide growth for future horizon years, as well as changes in the transportation network (i.e., roads and intersections) during the same period.

The proposed Project is a transportation improvement Project. As discussed in Section 4.12.2.7, the majority of intersections for future horizon years would see improved traffic conditions over the future without project conditions. Any localized impacts are within the area of influence and do not extend to the full Project Study Area. Therefore, as probable development projects were analyzed in conjunction with the proposed Project improvements, any significantly impacted intersections would also be cumulatively considerable impacts, as identified in previous sections.

4.12.2.9 Mitigation Measures

The program to mitigate the significant impacts identified for the Project includes the following major components:

- Implementation of a site-wide Transportation Demand Management (TDM) program for LAX-site employees to provide a variety of additional transportation access choices in order to promote non-auto travel.
- Intelligent signal system improvements, including signal controller upgrades and installation of CCTV cameras at key intersections within the Study Area.
- Specific intersection improvements, including physical mitigations and signal system and phasing enhancements.
- Fair-share contributions to highway improvements.

If any of the mitigation measure(s) **below** that include improvement(s) in other jurisdictions cannot be implemented for reasons beyond the control of the applicant, fisnificant impact at those locations **would** remain.

4.12.2.9.1 Transportation Demand Management Program

MM-ST (LAMP)-6. Transportation Demand Management (TDM) Program. Prior to the issuance of the Certificate of Occupancy for the CONRAC facility, Los Angeles World Airports shall:

- Prepare and circulate a general travel demand survey to a statistically viable number of LAX-based employees to ascertain mode of travel to/from work, a representative percentage of drive-alone and park employees versus those who utilize public transit or existing LAWA-managed rideshare programs (i.e., vanpool, carpool, FlyAway, etc.).
- Based on the results of above, LAWA shall prepare a LAX TDM Program that includes, but is not limited to the following:
  - The formation of a Los Angeles International Airport Area Transportation Management Organization (TMO) to organize and offer alternative transportation programs and benefits to LAX-area employees
  - The following transportation amenities/opportunities for LAX-area employees, as determined by Origin/Destination-based data
    - Enhanced vanpool program opportunities
    - Enhanced carpool opportunities
    - Transit passes

    - New car-share program opportunities
    - Pilot-program shuttle service for employees living in SB 535 designated disadvantaged communities

- Within nine months of the launch of the LAX TDM Program, LAWA will conduct a follow-up survey to ascertain the pros and cons of various programs, make adjustments as needed, and re-tool program efforts.
- Achieve a 5 percent trip reduction performance objective. Performance metrics for the 5 percent TDM Program shall be as follows:
    - Elimination of 200 peak hour trips (am or pm) identified as "drive alone" employee trips
    - Elimination of 800 average daily one-way trips identified as "drive alone" employee trips

4.12.2.9.2 Intelligent Transportation Signal System Improvements

Intelligent Transportation Systems (ITS) have been tested and implemented along major travel corridors in numerous major metropolitan areas including the City of Los Angeles, County of Los Angeles, and others. This enhanced traffic control system includes a computer-based traffic signal control program that provides fully responsive traffic signal control based on real-time traffic conditions. It automatically adjusts and optimizes traffic signal timing in response to current traffic demands on the entire signal network such that the number of stops and the amount of delay is minimized along with improved traffic signal coordination throughout the network.

An ITS is a fully responsive, real-time system. In order for that to be achieved, it must be provided with sufficient data to be effective and to make appropriate decisions regarding signal timing. Therefore, ITS requires additional vehicle sensors; computer hardware and networking; an upgrade in the communication system; and ideally, vehicle sensors on all approaches to all intersections in the sub-system. With the pertinent traffic data (number of vehicles) obtained from these sensors placed in advance of the intersections, the signal timing is adjusted to accommodate the prevailing conditions. Studies have shown that the benefit to traffic flow resulting from implementation of such a system is an improvement in the capacity of intersections in the corridor by 10 percent.

An integral part of the real-time operation of the traffic signal timings is the strategic placement of closed circuit TV (CCTV) cameras at key intersections. This provides the local transportation agency with the ability to monitor traffic operations and respond instantly to incidents that delay vehicles and transit service. The City of Los Angeles has determined that the upgrade of the signal controllers and installation of the CCTV cameras would increase intersection capacity by 1 percent (a 0.01 improvement in V/C ratio). Additionally, Changeable Message Signs (CMS) would help reduce traffic congestion by providing real-time traffic information and predictive time information to users along key access corridors.

Intersection improvements designed to alleviate the significant impacts of the Project consist of signal system enhancements including financial contribution toward the design and implementation of ITS improvements along two key travel corridors within the City of Inglewood – Century Boulevard and La Cienega Boulevard.

Signal system enhancements include provision of additional/upgraded equipment and/or providing connections to existing traffic control systems.

- **MM-ST (LAMP)-7. Signal System Corridor Improvements – Intelligent Transportation System (ITS), City of Inglewood.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA shall implement intersection improvements designed to reduce the significant impacts of the Project, consisting of signal system and phasing enhancements, including a monetary contribution to design and implementation of an Intelligent Transportation System (ITS) improvement along various key travel corridors within the City of Inglewood. Signal system and phasing enhancements include provision of additional/upgraded equipment and/or providing connections to existing traffic control systems.

  LAWA will implement a signal system upgrade along the La Cienega Boulevard corridor between La Tijera Boulevard and Century Boulevard; and along the Century Boulevard corridor between La Cienega Boulevard and Van Ness Avenue, by upgrading the signal controller and other equipment upgrades, as necessary to achieve the mitigation benefit at the following locations:

  - La Cienega Boulevard and Florence Avenue
  - La Cienega Boulevard and Manchester Boulevard
  - La Cienega Boulevard and Arbor Vitae Street
  - La Cienega Boulevard and Century Boulevard
  - Century Boulevard and I-405 Northbound on- and off-ramps
  - Century Boulevard and Inglewood Avenue
  - Century Boulevard and La Brea Avenue/Hawthorne Boulevard

- **MM-ST (LAMP)-8. Signal System Corridor Improvements - Closed Circuit TV (CCTV) Camera and Changeable Message Signs (CMS) Installation.** Prior to issuance of a Certificate of Occupancy for the West ITF, LAWA shall implement signal system upgrades within the study area by installing CCTV cameras at the locations identified below:

  - Sepulveda Boulevard and Manchester Avenue
  - Sepulveda Boulevard and La Tijera Boulevard
  - Sepulveda Boulevard and Westchester Parkway
  - Sepulveda Boulevard and Lincoln Boulevard
  - Sepulveda Boulevard and Century Boulevard
  - Sepulveda Boulevard and I-105 Freeway Ramps
  - Sepulveda Boulevard and Imperial Highway

Additionally, to provide real-time traffic information as well as predictive time information to the users, the Project will provide funding towards implementation of Changeable Message Signs (CMS) along key access corridors to LAX such as Sepulveda Boulevard, La Cienega Boulevard and Century Boulevard.

4.12.2.9.3 Roadway Corridor Improvements

- I-405 Northbound Auxiliary Lane – Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will work with Caltrans to fund an added auxiliary lane along northbound I-405 between El Segundo Boulevard on-ramp and the Imperial Highway off-ramp. This improvement would require widening the I-405 northbound roadway between the limits noted above including potentially widening the bridge over 120th Street.
- Imperial Highway off-ramp – Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will work with Caltrans to fund the widening of the off-ramp to two lanes at the exit from the I-405 northbound lanes and carrying the widening to the ramp junction at Imperial Highway to provide two left-turn lanes and a separate right-turn lane.
- La Cienega Boulevard Additional Lane – Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA shall work with the affected jurisdiction(s) to reconstruct the median along certain stretches of La Cienega Boulevard to allow for a third northbound travel lane between Imperial Highway and Century Boulevard during the peak periods, by restricting parking on the east side of the street. The proposed improvement would allow for three through lanes in both directions along La Cienega Boulevard between Imperial Highway and Century Boulevard during the peak time periods.

4.12.2.9.4 Intersection Improvements

Intersection improvements designed to reduce the significant impacts of the Project consist of the following: additional signal system and phasing enhancements in addition to the above mitigation measures, and physical improvements such as minor widening. Conceptual drawings showing details of the proposed physical improvement options overlaid on an aerial photomap base are provided in Appendix O. Widening and/or other improvements to the intersections would be designed to meet the requirements of LADOT, City of Los Angeles Bureau of Engineering, LACDPW, Caltrans, and/or City of Inglewood, based on the jurisdiction responsible for the intersection. Specific improvements are outlined below; results of the mitigation analysis are presented in Appendix X of Appendix O.

- **MM-ST (LAMP)-9. Modify the Intersection of Airport Boulevard and Century Boulevard.** Prior to issuance of a Certificate of Occupancy for the ITF West, LAWA will provide a signal modification to include a southbound right-turn overlap arrow, allowing right-turning vehicles to proceed at the same time the eastbound left-turn turn arrow is green. This improvement will require the prohibition of 'U'-turns in the eastbound direction.
- **MM-ST (LAMP)-10. Modify the Intersection of Arbor Vitae Street and Concourse Way-Isis Avenue.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will align the extension of Concourse Way to be directly across from Isis Avenue (north of Arbor Vitae Street) and

install a traffic signal of the intersection of Isis Avenue/Concourse Way and Arbor Vitae Street. The provision of a traffic signal at this location will allow left-turn movement in and out of Concourse Way, reducing the number of westbound and northbound left-turns at the intersection of Aviation Boulevard and Arbor Vitae Street. Through movements north and south between Isis Avenue and Concourse Way will not be permitted.

- **MM-ST (LAMP)-11. Modify the Intersection of La Cienega Boulevard and Arbor Vitae Street.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will provide a second eastbound left-turn lane and contribute to design and implementation of signal system improvement. The eastbound approach will be restriped to have one left-turn lane, a shared left-through lane, one through lane and a separate right-turn lane. The signal system improvement will increase the intersection capacity by 10 percent (a 0.10 improvement in V/C ratio).

- **MM-ST (LAMP)-12. Modify the Intersection of La Cienega Boulevard and Century Boulevard.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will restripe this intersection to provide northbound and southbound dual left-turn lanes and provide a separate westbound right-turn lane. The northbound approach will be restriped within existing right-of-way to provide dual left-turn lanes, two through lanes and two right-turn lanes. The southbound approach will be restriped from one left-turn lane, two through lanes and two right-turn lanes to dual-left-turn lanes, two through lanes and one right-turn lane. The existing westbound shared through-right turn lane will be restriped to a right-turn lane only. The westbound approach will have a left-turn lane, three through lanes and a separate right-turn lane. LAWA will also contribute to the design and implementation of signal system improvements to this intersection.

- **MM-ST (LAMP)-13. Modify the Intersection of La Cienega Boulevard and Florence Avenue.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will contribute to design and implementation of signal system improvement. This improvement will increase the intersection capacity by 10 percent (a 0.10 improvement in V/C ratio).

- **MM-ST (LAMP)-14. Modify the Intersection of Inglewood Avenue and Century Boulevard.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will contribute to design and implementation of signal system improvement. This improvement will increase the intersection capacity by 10 percent (a 0.10 improvement in V/C ratio).

- **MM-ST (LAMP)-15. Modify the Intersection of I-105 Freeway Ramps (east of Aviation Boulevard) and Imperial Highway.** Prior to the issuance of Certificate of Occupancy for the ITF East, LAWA will modify the design for the new 'C' Street being proposed between 111th Street and Imperial Highway to provide a separate right-turn lane on the southbound approach to Imperial Highway.

- **MM-ST (LAMP)-16. Modify the Intersection of La Cienega Boulevard and Manchester Boulevard.**

  Option 1: LAWA will contribute to design and implementation of signal system improvement. This improvement will increase the intersection capacity by 10 percent (a 0.10 improvement in V/C ratio).

  Option 2: LAWA will construct a separate northbound right-turn lane. In order accommodate the northbound right-turn lane, LAWA will widen the east side of La Cienega Boulevard. The northbound approach will have a left-turn lane, shared left-through lane, a through lane and a separate right-turn lane.

- **MM-ST (LAMP)-17. Modify the Intersection of Sepulveda Boulevard and Century Boulevard.** In conjunction with the construction of the new Sepulveda northbound access to the CTA, and prior to the elimination of the intersection of Sky Way and World Way, LAWA will provide a third westbound left-turn lane. As part of the proposed Project, new connections would be provided between westbound Century Boulevard to northbound Sepulveda Boulevard via New 'A' Street and W. 96th Street. This would result in reducing the number of westbound right-turning vehicles at Sepulveda Boulevard and Century Boulevard and eliminating the need for a second westbound right-turn lane. The proposed improvement will restripe the westbound right-turn lane into a third left-turn. The westbound approach will have three left-turn lanes and one right-turn lane.
- **MM-ST (LAMP)-18. Modify the Intersection of La Brea Avenue/Hawthorne Boulevard and Century Boulevard.** Prior to issuance of a Certificate of Occupancy for the CONRAC, LAWA will provide funds to the City of Inglewood that will implement the following: add a second left-turn lane on the eastbound and westbound approaches. In order accommodate the additional left-turn lanes, it would require widening of Century Boulevard. The eastbound and westbound approaches would have dual left-turn lanes, two through lanes and a shared through-right-turn lane. LAWA will also contribute to the design and implementation of signal system improvements at this intersection.

4.12.2.9.5 Fair-Share Contributions for Cumulative State Highway/Freeway Impacts

Caltrans requires that the Project applicant pay its fair-share of any feasible improvements that may be implemented at significantly impacted segments of the State highway/freeway system. Caltrans has adopted a mathematical formula to calculate a project's fair-share of an overall improvement cost for the significantly impacted segments. The fair-share calculation assigns costs to a project in proportion to the project's share of the traffic growth between existing conditions and the long-range planning horizon year of 2035. The payment of the fair-share amount is then deemed to be mitigation of the project impacts.[21] As part of the mitigation for the proposed Project's impacts to the State highway/freeway system, LAWA would monetarily fund a fair-share contribution to highway system improvements to reduce the impact described below.

- **I-405 Corridor and Network Connectivity Enhancements.** The Project will fund completion of a project study report and environmental documents as its fair share to Caltrans efforts towards identification, evaluation and implementation of the I-405 corridor mobility and access improvements such as the I-405 southbound collector-distributor roadway improvements between Florence Avenue and Century Boulevard; associated I-405 SB interchange access improvements at La Cienega Boulevard, Manchester Boulevard and Century Boulevard; I-405 northbound access improvements at Imperial Highway, Century Boulevard and La Cienega Boulevard; and the I-105 westbound to I-405

[21] State of California, Department of Transportation, Caltrans, *Guide for the Preparation of Traffic Impact Studies*, Appendix B, December 2002.

northbound freeway connector enhancement to potentially improve access to the Century Boulevard interchange. These improvements would be planned to operate in conjunction with the ITS improvements along the I-405 and I-105 freeway corridors such that traffic flow experiencing recurrent and non-recurrent congestion can be improved and managed, and safety is enhanced on an overall basis.

- **I-105 Freeway Intelligent Transportation System (ITS) Improvements.** The Project will contribute its fair share to Caltrans efforts towards implementation of Active Traffic Management (ATM) Strategies along the I-105 freeway corridor between I-110 and Sepulveda Boulevard. ATM is a proactive set of strategies to dynamically manage and regulate traffic based on prevailing conditions of recurrent and non-recurrent congestion. These strategies could include part-time Hard Shoulder Running (HSR) with speed harmonization, queue warning, dynamic corridor adaptive ramp metering, adaptive traffic signal control, ramp meter-arterial signal coordination, dynamic routing, predictive traveler information and dynamic junction control. Two parallel arterials to the I-105 corridor namely El Segundo Boulevard and Imperial Highway would be included as part of the ATM improvements. These ATM strategies would ultimately improve mobility and enhance safety by using real-time data, technology and decision support systems for making performance-driven decisions.
- **I-405 Freeway Intelligent Transportation System (ITS) Improvements.** The Project will contribute its fair share to Caltrans efforts towards implementation of Active Traffic Management (ATM) Strategies along the I-405 freeway corridor between SR 90 (Marina Freeway) and Rosecrans Avenue. These strategies would help dynamically manage and regulate traffic based on prevailing conditions of recurrent and non-recurrent congestion. The strategies could include dynamic speed harmonization, queue warning, dynamic corridor adaptive ramp metering, adaptive traffic signal control, ramp meter-arterial signal coordination, dynamic routing, predictive traveler information and dynamic junction control. Key parallel arterials to the I-405 corridor namely La Cienega Boulevard, Sepulveda Boulevard and Sawtelle Boulevard would be included as part of the ATM improvements. These ATM strategies would ultimately improve mobility and enhance safety by using real-time data, technology and decision support systems for making performance-driven decisions during prevailing congested conditions.

As described, several types of improvements to the off-Airport transportation system are proposed to mitigate the impacts associated with the proposed Project. Such improvements include the addition of, or improvements to, travel and turn lanes, and traffic signal phasing modifications, and fair share contribution to improve the computer-controlled traffic signal control systems in the City of Inglewood.

The environmental impacts associated with the proposed improvements to the off-Airport transportation system would depend on the specific nature, location, and extent of such improvements. For example, the addition or improvement of travel and/or turn lanes that is accomplished by restriping of lanes within existing roadway segments would, in general, have a low potential for significant environmental effects other than improvement in traffic flows. The addition of lanes accomplished by the removal or modification of existing raised medians would have some environmental impacts such as construction-related noise, air quality impacts, temporary lane closures, and visual impacts if the removed median is currently landscaped. The addition of lanes accomplished with elimination of on-street parking could impact nearby off-street parking areas and/or remaining on-street parking areas to the extent that the affected parking redistributes to such areas. The addition of lanes accomplished by the physical widening of roadway segments could result in the types of environmental impacts described above relative to the removal or modification of raised medians, and could also result in the reduction of the widths of sidewalks or parkways, possibly impacting trees, utilities, or other existing improvements, if any, located within the needed rights-of-way. The addition of lanes could also induce additional vehicle miles traveled.

4.12.2.10 Level of Significance after Mitigation

This section evaluates the level of significance after implementing the recommended mitigation measures identified above in Section 4.12.2.9.

4.12.2.10.1 LAX Landside Access Modernization Program Project

Baseline (2015) Compared to 2015 With Project

The results of the intersection analysis of the traffic conditions with the proposed mitigation measures under the 2015 With Project scenario are summarized in **Table 4.12.2-36** for the morning, midday, and evening peak hours. As shown in Table 4.12.2-36, the proposed measures would fully mitigate all Project-related intersection impacts under the 2015 With Project scenario to less than significant levels.

2024 Future Without Project Compared to 2024 Future With Project

The results of the analysis of the traffic conditions with the proposed mitigation measures under the 2024 Future With Project scenario are summarized in **Table 4.12.2-37** for the morning, mid-day, and evening peak hours. As shown in Table 4.12.2-37, the proposed measures would fully mitigate all Project-related intersection impacts under the 2024 With Project scenario to less than significant levels.

2035 Future Without Project Compared to 2035 Future With Project

The results of the analysis of the traffic conditions with the proposed mitigation measures under the 2035 Future With Project scenario are summarized in **Table 4.12.2-38** for the morning, mid-day, and evening peak hours. As shown in Table 4.12.2-38, the 2035 Future With Project condition would result in seven intersections with less than significant impacts and one intersection (La Cienega Boulevard and Arbor Vitae Street) with a significant unavoidable impact which would also be cumulatively considerable. No feasible further mitigation measures are available to reduce this impact to a less than significant level that are in LAWA's control. Right-of-way within the City of Inglewood would be required to further reduce the impact at this intersection.

Under 2035 With Project conditions, one freeway segment, the I-405 at La Cienega Boulevard (northbound), would be significantly impacted and would also be a cumulatively considerable impact. Implementation of the mitigation identified in Section 4.12.2.9, including the fair share contribution to I-405 mobility improvements, would not fully mitigate the significant impact, as shown in **Table 4.12.2-39**. Impacts to this freeway segment would be significant and unavoidable.

Table 4.12.2-36: Intersection Analysis - Baseline (2015) Compared to 2015 With Project with Mitigation

		2015 BASELINE						2015 WITH PROJECT AND MITIGATION						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
65	Sepulveda Boulevard and Century Boulevard	0.754	C	0.594	A	0.689	B	0.763	C	0.695	B	0.643	B	---	No	---
93	Aviation Boulevard and Arbor Vitae Street	0.802	D	0.521	A	0.720	C	0.718	C	0.395	A	0.653	B	---	---	No
119	La Cienega Boulevard and Century Boulevard	0.891	D	0.511	A	0.823	D	0.860	D	0.513	A	0.655	B	No	---	No

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., July 2016.

Table 4.12.2-37: Intersection Analysis - 2024 Future With Project and Mitigation Compared to 2024 Future Without Project

		2024 WITHOUT PROJECT						2024 WITH PROJECT AND MITIGATION						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
84	Airport Boulevard and Century Boulevard	0.611	B	0.691	B	0.660	B	0.540	A	0.669	B	0.681	B	---	No	No
93	Aviation Boulevard and Arbor Vitae Street	0.912	E	0.638	B	0.792	C	0.813	D	0.601	B	0.696	B	---	No	No
115	La Cienega Boulevard and Florence Avenue	0.769	C	0.956	E	1.125	F	0.695	B	0.864	D	1.056	F	---	---	No
117	La Cienega Boulevard and Arbor Vitae Street	0.813	D	0.667	B	0.806	D	0.910	E	0.653	B	0.865	D	No	---	---
119	La Cienega Boulevard and Century Boulevard	0.930	E	0.693	B	0.915	E	0.858	D	0.709	C	0.923	E	No	---	No
136	Inglewood Avenue and Century Boulevard	0.837	D	n/a	n/a	1.000	E	0.732	C	n/a	n/a	0.895	D	---	n/a	No

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., July 2016.

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Table 4.12.2-38: Intersection Analysis - 2035 Future With Project and Mitigation Compared to 2035 Future Without Project

		2035 WITHOUT PROJECT						2035 WITH PROJECT AND MITIGATION						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
65	Sepulveda Boulevard and Century Boulevard	0.839	D	0.777	C	0.947	E	0.844	D	0.780	C	0.887	D	No	No	---
93	Aviation Boulevard and Arbor Vitae Street	0.996	E	0.731	C	0.902	E	0.884	D	0.675	B	0.778	C	---	No	No
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial	0.838	D	0.440	A	0.713	C	0.815	D	0.536	A	0.749	C	---	---	No
115	La Cienega Boulevard and Florence Avenue	0.826	D	1.022	F	1.162	F	0.738	C	0.936	A	1.107	F	---	---	No
116	La Cienega Boulevard and Manchester Boulevard	0.801	D	0.908	E	0.880	D	0.761	C	0.902	A	0.902	E	---	No	No
117	La Cienega Boulevard and Arbor Vitae Street	0.887	D	0.724	C	0.852	D	1.022	F	0.760	A	1.070	F	**Yes**	---	**Yes**
119	La Cienega Boulevard and Century Boulevard	0.985	E	0.813	D	1.088	F	0.877	D	0.816	A	0.963	E	No	No	No
136	Inglewood Avenue and Century Boulevard	0.873	D	n/a	n/a	1.064	F	0.757	C	n/a	n/a	0.958	E	---	n/a	No

NOTES:

--- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-39: Freeway Segment Analysis - 2035 Future With Project and Mitigation Compared to 2035 Future Without Project (p.m. peak hour)

					2035 WITHOUT PROJECT					2035 WITH PROJECT AND MITIGATION						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
9.	I-405 at La Cienega Boulevard	23.61	NB	4	9,282	61.3	F	2643	1.322	9,370	63.2	F	2668	1.334	0.012	**Yes**
		23.61	SB	4	7,708	39.2	E	2195	1.098	7,603	38.2	E	2165	1.083	-0.015	No

NOTES:

[a] Peak hour volume based on traffic volumes provided by Caltrans.

[b] Speed = Average passenger car speed.

[c] Density >45 pc/mi/ln represents oversaturated conditions.

[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.

[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

4.12.2.10.2 LAX Landside Access Modernization Program Potential Future Related Development

A summary of the effectiveness of the proposed intersection mitigation measures under the 2035 Future With Project and Potential Future Related Development scenario is presented in **Table 4.12.2-40**. As shown in Table 4.12.2-40, the 2035 Future With Project and Potential Future Related Development condition would result in ten intersections with less than significant impacts, and one intersection (La Cienega Boulevard and Arbor Vitae Street) with a significant unavoidable impact which would also be cumulatively considerable. No feasible further mitigation measures are available to reduce this impact to a less than significant level that are in LAWA's control. Right-of-way within the City of Inglewood would be required to further reduce the impact at this intersection.

Under 2035 With Project and Potential Future Related Development conditions, three freeway segments, the I-405 at La Cienega Boulevard, I-405 at La Tijera Boulevard, and I-105 at Crenshaw would be significantly impacted. With implementation of the mitigation identified in Section 4.12.2.9, including the fair share contribution to I-405 mobility and ITS improvements and I-105 ITS improvements, impacts would be less than significant for the I-105 at Crenshaw freeway segment. However, these improvements would not fully mitigate the significant impact at the I-405 segments. The results of the analysis of the freeway conditions with the proposed mitigation measures under the 2035 Future With Project and Potential Future Related Development scenario are summarized in **Table 4.12.2-41** for the evening peak hour. Impacts to the following two northbound freeway segments would be significant and unavoidable and cumulatively considerable: the I-405 at La Cienega Boulevard and the I-405 at La Tijera Boulevard.

Additionally, because implementation of mitigation to the State highway system is within the responsibility and jurisdiction of a public agency other than LAWA (i.e., Caltrans), LAWA cannot require it to be implemented. Significant impacts associated with cumulative impacts to freeway segments may not be reduced to less than significant if Caltrans does not adopt effective mitigation measures or if mitigation is infeasible. In that case, the proposed Project's indirect impacts on these freeway segments would remain significant and unavoidable.

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Table 4.12.2-40: Intersection Analysis - 2035 Future With Project, Potential Future Related Development, and Mitigation Compared to 2035 Future Without Project

		2035 WITHOUT PROJECT						2035 WITH PROJECT, POTENTIAL FUTURE RELATED DEVELOPMENT, AND MITIGATION						SIGNIFICANT IMPACT?		
		a.m.		midday		p.m.		a.m.		midday		p.m.				
#	INTERSECTION	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	a.m.	midday	p.m.
63	Sepulveda Boulevard and Westchester Parkway	0.812	D	0.965	E	0.971	E	0.824	D	0.955	E	0.908	E	No	---	---
65	Sepulveda Boulevard and Century Boulevard	0.839	D	0.777	C	0.947	E	0.845	D	0.782	C	0.889	D	No	No	---
93	Aviation Boulevard and Arbor Vitae Street	0.996	E	0.731	C	0.902	E	0.901	E	0.693	B	0.812	D	---	No	No
104	I-105 Ramps (e/o Aviation Boulevard) and Imperial	0.838	D	0.440	A	0.713	C	0.816	D	0.537	A	0.750	C	---	---	No
115	La Cienega Boulevard and Florence Avenue	0.826	D	1.022	F	1.162	F	0.759	C	0.947	E	1.127	F	---	---	No
116	La Cienega Boulevard and Manchester Boulevard	0.801	D	0.908	E	0.880	D	0.770	C	0.911	E	0.920	E	---	No	No
117	La Cienega Boulevard and Arbor Vitae Street	0.887	D	0.724	C	0.852	D	1.050	F	0.777	C	1.084	F	**Yes**	---	**Yes**
119	La Cienega Boulevard and Century Boulevard	0.985	E	0.813	D	1.088	F	0.882	D	0.826	D	0.985	E	No	No	No
130	I-405 Northbound Ramps and Century Boulevard	0.993	E	0.761	C	0.890	D	0.872	D	0.625	B	0.794	C	No	---	---
136	Inglewood Avenue and Century Boulevard	0.873	D	n/a	n/a	1.064	F	0.774	C	n/a	n/a	0.977	E	---	n/a	No
147	La Brea Avenue/Hawthorne Boulevard and Century	0.876	D	n/a	n/a	0.986	E	0.729	C	n/a	n/a	0.835	D	---	n/a	No

NOTE: --- = No Significant Impact

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Table 4.12.2-41: Freeway Segment Analysis - 2035 Future With Project, Potential Future Related Development, and Mitigation Compared to 2035 Future Without Project (p.m. peak hour)

					2035 WITHOUT PROJECT					2035 WITH PROJECT, POTENTIAL FUTURE RELATED DEVELOPMENT, AND MITIGATION						
NO.	FREEWAY SEGMENT	POST MILE	DIRECTION	LANES	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	VOLUME [A]	DENSITY [C] (PC/MI/LN)	LOS	DEMAND FLOW RATE (D)	D/C [D]	D/C INCREASE	D/C IMPACT F>=0.01
8.	I-405 at La Tijera Boulevard	24.25	NB	4	9,016	56.2	F	2567	1.284	9,095	57.7	F	2590	1.295	0.011	**Yes**
		24.25	SB	4	7,492	37.2	E	2133	1.067	7,467	37.0	E	2126	1.063	-0.004	No
9.	I-405 at La Cienega Boulevard	23.61	NB	4	9,282	61.3	F	2643	1.322	9,371	63.2	F	2668	1.334	0.012	**Yes**
		23.61	SB	4	7,708	39.2	E	2195	1.098	7,609	38.2	E	2166	1.083	-0.015	No
20.	I-105 West of Crenshaw Boulevard	R4.20	EB	3	7,191	68.4	F	2730	1.365	7,237	69.9	F	2747	1.374	0.009	No
		R4.00	WB	3	7,512	81.2	F	2852	1.426	7,436	77.8	F	2823	1.412	-0.014	No

NOTES:
[a] Peak hour volume based on traffic volumes provided by Caltrans.
[b] Speed = Average passenger car speed.
[c] Density >45 pc/mi/ln represents oversaturated conditions.
[d] The freeway mainline capacity used in calculation of D/C is 2,000, per Caltrans.
[e] Model estimated volume data.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

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4.12.3 CONSTRUCTION SURFACE TRANSPORTATION

4.12.3.1 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 (January 2020) and the peak cumulative condition (November 2019). The peak construction month for the proposed Project does not correspond to the peak cumulative condition, which includes traffic from the construction of other known projects projected to be under construction during the construction schedule (October 2017 through December 2035). Additionally, this section addresses temporary traffic, access, and transit impacts during construction.

This proposed Project construction traffic analysis incorporates 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,[1] the South Airfield Improvement Project (SAIP) EIR,[2] the Crossfield Taxiway Project (CFTP) EIR,[3] Bradley West Project EIR,[4] Central Utility Plant Replacement Project (CUP-RP) EIR,[5] Runway 7L/25R Runway Safety Area (RSA) and Associated Improvements Project EIR,[6] West Aircraft Maintenance Area (WAMA) Project EIR,[7] Midfield Satellite Concourse (MSC) EIR,[8] and the Runway 6L-24R and Runway 6R-24L Runway Safety Area (RSA North) EIR.[9] Analysis procedures and data from these other projects were applied and updated as appropriate for the proposed Project's cumulative impact analysis.

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1 City of Los Angeles, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements*, (SCH 1997061047), April 2004.

2 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.

3 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.

4 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.

5 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.

6 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.

7 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.

8 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.

9 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.

The construction traffic analysis study area is depicted in **Figure 4.12.3-1**. 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.

These lots are located throughout the project area and include sites in the Central Terminal Area (CTA) (Lot D), 6150 Complex (Lot P), Joe's Parking/Metro/Skyview (Lot R), Metro Bus South/Avis South (Lot Q), Belford Lot (Lot K), Manchester Square (Lot J), and Continental City (Lot E). Construction employee parking, material delivery, and staging would likely occur at the lot nearest each project element (e.g., any projects within the CTA would use Lot D; Consolidated Rental Car Facility (CONRAC) construction would use Lot J; etc.). 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 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.

4.12.3.2 Methodology

4.12.3.2.1 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, and RSA North 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 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*[10], notwithstanding that a construction traffic analysis is not typically required by LADOT.

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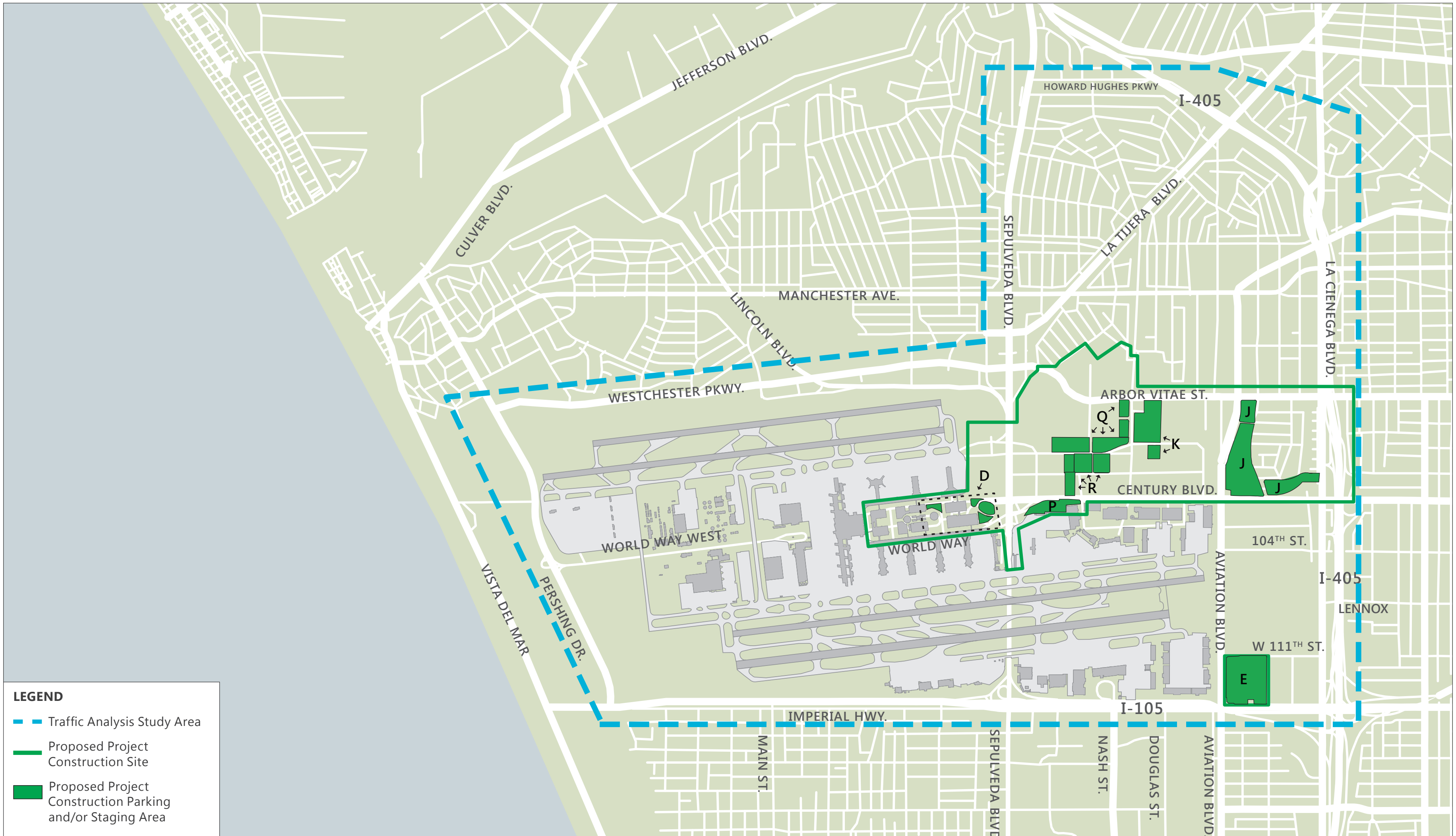
10 City of Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.



SOURCES: Los Angeles World Airports, Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.3-1

NORTH 0 Not to Scale

Construction Traffic Analysis Study Area

[DRAFT]

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The following steps and assumptions were used to develop the analysis methodology:

- The construction traffic study area depicted in Figure 4.12.3-1 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)[11] from 7:00 a.m. to 9:00 a.m., and from 4:00 p.m. to 6:00 p.m., and are presented in **Appendix O**. 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 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.

4.12.3.2.2 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 the NOP was published (February 2015). Intersection turning movement volumes were collected over a two year period (2013 to 2015), representing the most current comprehensive traffic counts completed by LAWA. These volumes were used as a basis for preparing the construction traffic analysis and assessing Project-related construction traffic impacts, and are presented in Appendix O. The following steps were taken to develop baseline traffic conditions information.

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,[12] 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,

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[11] Raju Associates, Inc., LAX Intersection Traffic Counts, 2013-2015, March 2015.

[12] Dowling Associates, TRAFFIX Version 7.7.

including the Transportation Research Board Critical Movement Analysis (CMA) Circular 212 Planning Method,[13] which is the required intersection analysis methodology for traffic impact studies conducted within the City of Los Angeles.

Calculate Baseline 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.

4.12.3.2.3 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, a traffic scenario was 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 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 P.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 are presented in **Appendix P.4**.

Estimate Baseline 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 (in January 2020) to the baseline volumes.

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13 Transportation Research Board, Transportation Research Circular No. 212, *Interim Materials on Highway Capacity*, January 1980.

4.12.3.2.4 Delineation 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 delineating 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 4.12.3.5 provides descriptions of cumulative projects and how the traffic generation related to those projects would overlap with that of the proposed Project. Also, background traffic was increased to reflect additional growth from non-specific projects, which adds an element of the second option to result in a cumulative impacts analysis that is more conservative.

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 P.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 2015 traffic study area roadway network was held constant to 2019.

Estimate November 2019 Cumulative (Without Project) Traffic Volumes - Cumulative (November 2019) traffic volumes were estimated using the following process:

- 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 LADOT for use in the SAIP[14] 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, and RSA North EIR.
- 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[15]; and the Terminals 2 and 3 Modernization Project, for which construction trip information was estimated for use in a project-specific EIR). 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.

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 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 overall cumulative peak in November 2019.

4.12.3.2.5 Determination of Impacts and Mitigation Measures

The following steps were conducted to calculate intersection levels of service, identify impacts, and identify potential mitigation measures for significant impacts, if feasible. Detailed intersection level of service (LOS) outputs are presented in **Appendix P.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 was estimated using the CMA planning level methodology, as defined in Transportation Research Board Circular 212,[16] in accordance with

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14 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.

15 Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Northside Plan Update, Appendix E, Traffic Study*, December 2014.

16 Transportation Research Board, Transportation Research Circular No. 212, *Interim Materials on Highway Capacity*, January 1980.

LADOT's *Traffic Study Policies and Procedures*,[17] and the L.A. CEQA Thresholds Guide.[18] Intersection LOS was analyzed for the following conditions:

- Baseline;
- Baseline Plus Peak Project Traffic;
- Future Cumulative Traffic (November 2019) Without Project;
- Future Cumulative Traffic (November 2019) With Project.

Identify Project Impacts - Project-related impacts associated with construction of the proposed Project were identified for intersections that would potentially 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 4.12.3.6 were used to determine impact significance. Project-related impacts and cumulative impacts were determined by comparing the LOS results for the following:

- **Baseline Plus Peak Proposed Project Compared with Baseline:** This comparison is utilized to isolate the impacts of the proposed Project.
- **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. An impact was deemed significant if it would exceed the allowable 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 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 4.12.3.6 below.

Identify Mitigation Measures - Mitigation measures were identified for intersections determined to be significantly affected by construction-related traffic.

4.12.3.3 Existing Conditions

4.12.3.3.1 Regulatory Context

The LADOT *Traffic Study Policies and Procedures* manual requires that a Traffic Study be prepared if the following criteria are met:

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[17] City of Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.

[18] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

- 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, a Traffic Study would be required 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 Traffic Impact Study would typically be required for the proposed Project. Additionally, as the proposed Project would alter roadway circulation patterns or increase traffic volumes subsequent to construction, a CMP analysis is also required for post-construction traffic operations, and is described further in Section 4.12.2. 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."[19] 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.

4.12.3.3.2 Baseline Conditions

As indicated above, baseline conditions relate to the facilities and general conditions that existed during a typical weekday in 2015 for the hours of 7:00 a.m. to 8:00 a.m. and 4:00 p.m. to 5:00 p.m.

4.12.3.3.3 Construction Traffic Study Area

The construction traffic study area is depicted in Figure 4.12.3-1. 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,

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[19] 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.

Sepulveda Boulevard, and Howard Hughes Parkway to the north. Figure 4.12.3-1 depicts the proposed Project construction site, which extends along the north and south side of Century Boulevard, between the CTA and La Cienega Boulevard.

The construction employee parking and materials staging areas are located throughout the construction traffic study area and include sites in the CTA (Lot D), 6150 Complex (Lot P), Joe's Parking/Metro/Skyview (Lot R), Metro Bus South/Avis South (Lot Q), Belford Lot (Lot K), Manchester Square (Lot J), and Continental City (Lot E). The construction traffic analysis assumed that construction employee parking, material delivery, and staging would occur at the lot nearest each project element.

4.12.3.3.4 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.

4.12.3.3.5 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 4.12.3-1** and depicted on **Figure 4.12.3-2**.

Intersection Control and Geometry

All of the construction traffic study area intersections listed in Table 4.12.3-1 and depicted in Figure 4.12.3-2 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 P.1**.

[DRAFT]

Table 4.12.3-1: 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., August 2016.

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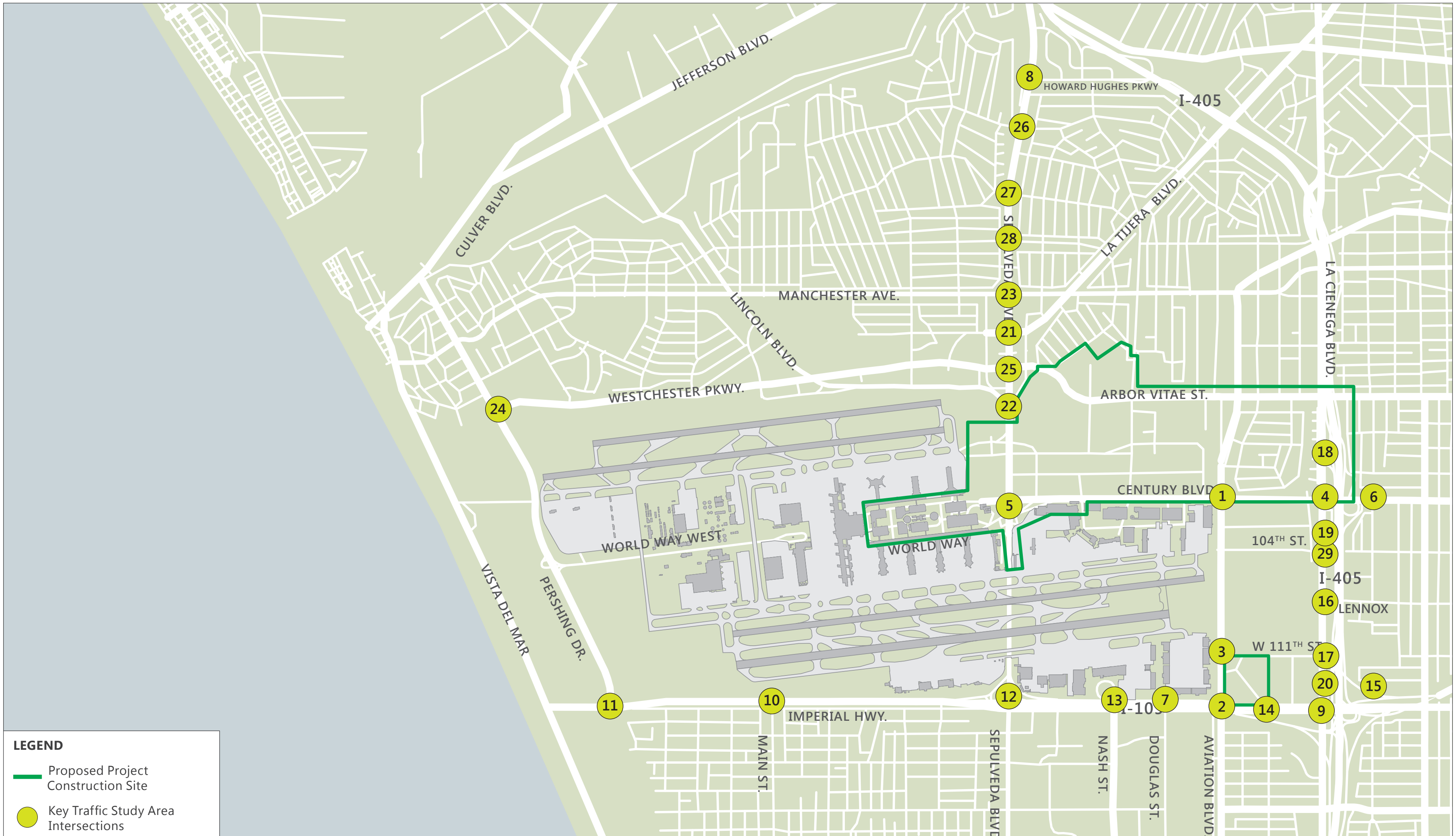

SOURCES: Los Angeles World Airports, Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.3-2

Construction Traffic Study Area Intersections

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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 material delivery trucks accessing/egressing the staging locations. 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 lots prior to 7:00 a.m. (i.e., the timing of the morning shift [7:00 a.m. to 3:00 p.m.] requires all employees to be on-site prior to the 7:00 a.m. to 8:00 a.m. 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 locations. 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 lots prior 4:00 p.m. (i.e., the timing of the morning shift [7:00 a.m. to 3:00 p.m.] assumes construction employees would depart the staging lots during the 3:00 p.m. to 4:00 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.

Baseline Intersection Volumes

Baseline traffic volumes consist of the traffic volumes that represent traffic activity at the time the NOP for the EIR was published (February 2015). Baseline volumes are based on actual data collected during the a.m. and p.m. peak hours from 2013 to 2015. Baseline intersection traffic volumes are provided in Appendix P.2.

4.12.3.3.6 Baseline Intersection Analyses

Intersection LOS 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 4.12.3-2**.

In accordance with LADOT analysis procedures, the volume/capacity (v/c) ratio 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*.[20]

Table 4.12.3-2: Level of Service 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., August 2016.

The estimated intersection LOS for baseline conditions is provided in **Table 4.12.3-3**. As shown in Table 4.12.3-3, most of the intersections operated at LOS C or better during the baseline a.m. and p.m. peak periods analyzed for the proposed Project, with the following exceptions:

- La Cienega Boulevard and Century Boulevard (Intersection #4) – LOS D p.m. peak hour
- Century Boulevard and I-405 Northbound Ramp (Intersection #6) – LOS D a.m. peak hour
- Imperial Highway and Sepulveda Boulevard (Intersection #12) – LOS D a.m. peak hour and LOS F p.m. peak hour
- Sepulveda Boulevard and Lincoln Boulevard (Intersection #22) – LOS D p.m. peak hour
- Sepulveda Boulevard and 76th / 77th Street (Intersection #26) – LOS D a.m. peak hour

The LOS results from the TRAFFIX program, including the volume, geometry and other inputs used to produce these results are provided in Appendix P.3.

[20] City of Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.

[DRAFT]

Table 4.12.3-3 (1 of 2): Baseline Intersection Analysis Results

INTERSECTION	PEAK HOUR[1/]	V/C[2/]	LOS[3/]
1. Aviation Blvd. & Century Blvd.	AM Peak Hour	0.522	A
	PM Peak Hour	0.736	C
2. Imperial Hwy. & Aviation Blvd.	AM Peak Hour	0.628	B
	PM Peak Hour	0.577	A
3. Aviation Blvd. & 111th St.	AM Peak Hour	0.475	A
	PM Peak Hour	0.423	A
4. La Cienega Blvd. & Century Blvd.	AM Peak Hour	0.722	C
	PM Peak Hour	0.802	D
5. Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.727	C
	PM Peak Hour	0.645	B
6. Century Blvd. & I-405 N/B Ramp	AM Peak Hour	0.824	D
	PM Peak Hour	0.608	B
7. Imperial Hwy. & Douglas St.	AM Peak Hour	0.343	A
	PM Peak Hour	0.551	A
8. Sepulveda Blvd. & H. Hughes Pkwy.	AM Peak Hour	0.591	A
	PM Peak Hour	0.578	A
9. Imperial Hwy. & La Cienega Blvd.	AM Peak Hour	0.415	A
	PM Peak Hour	0.620	B
10. Imperial Hwy. & Main St.	AM Peak Hour	0.542	A
	PM Peak Hour	0.554	A
11. Imperial Hwy. & Pershing Dr.	AM Peak Hour	0.375	A
	PM Peak Hour	0.441	A
12. Imperial Hwy. & Sepulveda Blvd.	AM Peak Hour	0.826	D
	PM Peak Hour	1.183	F
13. Imperial Hwy. & Nash St.	AM Peak Hour	0.540	A
	PM Peak Hour	0.337	A
14. Imperial Hwy. & I-105 Ramp	AM Peak Hour	0.716	C
	PM Peak Hour	0.493	A
15. Imperial Hwy. & I-405 NB Ramp	AM Peak Hour	0.532	A
	PM Peak Hour	0.749	C
16. La Cienega Blvd. & Lennox Blvd.	AM Peak Hour	0.486	A
	PM Peak Hour	0.470	A
17. La Cienega Blvd. & 111th St.	AM Peak Hour	0.314	A
	PM Peak Hour	0.264	A
18. La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.799	C
	PM Peak Hour	0.671	B
19. La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.393	A
	PM Peak Hour	0.308	A
20. La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.445	A
	PM Peak Hour	0.255	A
21. Sepulveda Blvd. & La Tijera Blvd.	AM Peak Hour	0.610	B
	PM Peak Hour	0.729	C
22. Sepulveda Blvd. & Lincoln Blvd.	AM Peak Hour	0.688	B
	PM Peak Hour	0.860	D

Table 4.12.3-3 (2 of 2): Baseline Intersection Analysis Results

INTERSECTION	PEAK HOUR[1/]	V/C[2/]	LOS[3/]
23. Sepulveda Blvd. & Manchester Ave.	AM Peak Hour	0.764	C
	PM Peak Hour	0.789	C
24. Westchester Pkwy. & Pershing Dr.	AM Peak Hour	0.414	A
	PM Peak Hour	0.247	A
25. Sepulveda Blvd. & Westchester Pkwy.	AM Peak Hour	0.763	C
	PM Peak Hour	0.796	C
26. Sepulveda Blvd. & 76th/77th St.	AM Peak Hour	0.809	D
	PM Peak Hour	0.431	A
27. Sepulveda Blvd. & 79th/80th St.	AM Peak Hour	0.688	B
	PM Peak Hour	0.446	A
28. Sepulveda Blvd. & 83rd St.	AM Peak Hour	0.566	A
	PM Peak Hour	0.404	A
29. La Cienega Blvd. & 104th St.	AM Peak Hour	0.327	A
	PM Peak Hour	0.359	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: Ricondo & Associates, Inc., using TRAFFIX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

4.12.3.3.7 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, Capital Programming & 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.

4.12.3.4 Project-Generated Traffic

Traffic that would be generated by the proposed Project is defined below for peak period of traffic generation.

4.12.3.4.1 Project Construction Traffic During Project Peak (January 2020)

The peak construction period for the proposed Project would likely occur during January 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 966 construction employees would access the Project construction site on a daily basis during the peak period of construction. Construction times were assumed to vary based on the type and location of construction. It was assumed that construction of the APM guideway and station in the vicinity of the CTA would occur over two shifts; with the night shift occurring from approximately 1:00 a.m. to 9:00 a.m., and the day shift occurring from approximately 9:00 a.m. to 7:00 p.m. The remaining construction activity would also occur over two shifts with a day shift occurring from approximately 7:00 a.m. to 3:00 p.m. and a night shift occurring from approximately 3:00 p.m. to 11:00 p.m.

Based on the construction schedule described above, employees were estimated to be entering the site between 12:00 a.m. to 1:00 a.m., 6:00 a.m. to 7:00 a.m., 8:00 a.m. to 9:00 a.m., and 2:00 p.m. to 3:00 p.m.. Conversely, employees were estimated to be exiting the site between 9:00 a.m. to 10:00 a.m., 3:00 p.m. to 4:00 p.m., 7:00 p.m. to 8:00 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.[21] 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 840 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:

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[21] Southern California Association of Governments, *Regional High-Occupancy Vehicle Lane System Performance Study*, November 4, 2004.

VEHICLE TYPE	PCE FACTOR
Construction employees[22]	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 January 2020. The construction traffic analysis assumed that employees working on the proposed Project would park at the lot nearest each construction element. These lots are located throughout the Project study area and include Lot D, Lot P, Lot R, Lot Q, Lot K, Lot J, and Lot E. Specifically, for construction elements occurring during January 2020, construction employees would be accessing Lot D (551 daily employees), Lot K (213 daily employees), and Lot P (202 daily employees). 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.

Delivery trucks carrying construction equipment and material would enter and exit the materials staging areas located throughout the Project study area. Similar to construction employee parking, the construction schedule was reviewed, and delivery trucks were distributed to the nearest staging lot; in particular, Lot D (120 daily trips), Lot K (154 daily trips), and Lot P (115 daily trips) were estimated to be used during the Project peak (January 2020). Using an assumed PCE factor of 2.5 per vehicle and distributing these volumes (389 daily trips) in accordance with the likely delivery schedule (over 12 hours), it was estimated that a total of 81 PCEs (389 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 January 2020 are summarized by hour in **Table 4.12.3-4**. 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).

4.12.3.4.2 Proposed Project Construction Trip Distribution

The locations of the proposed Project construction sites, construction employee parking areas, delivery staging areas, and other relevant features are depicted in Figure 4.12.3-1 and **Figure 4.12.3-3**. As shown in Figure 4.12.3-3, trucks would use the regional freeway system (I-405 and I-105), Imperial Highway, Aviation Boulevard, and Century Boulevard to access the construction employee parking and delivery staging areas. The regional and local traffic flow distributions are also provided in Figure 4.12.3-3.

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[22] It should be noted that a different conversion factor was applied to determine the number of construction employee vehicles that would access the 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.

Table 4.12.3-4: Project Peak (January 2020) – Proposed Project-Related Construction Traffic PCEs

HOUR		EMPLOYEE 1/		TRUCK 2/		EMPLOYEE SHUTTLES 3/		
		TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT	TRIPS IN	TRIPS OUT	TOTAL CONSTRUCTION PCES
0:00	1:00	106	-	-	-	-	-	106
1:00	2:00	-	-	-	-	-	-	-
2:00	3:00	-	-	-	-	-	-	-
3:00	4:00	-	-	-	-	-	-	-
4:00	5:00	-	-	-	-	-	-	-
5:00	6:00	-	-	-	-	-	-	-
6:00	7:00	523	-	81	81	-	-	685
7:00	**8:00**	**-**	**-**	**81**	**81**	**-**	**-**	**162**
8:00	9:00	57	-	81	81	-	-	219
9:00	10:00	-	106	81	81	-	-	268
10:00	11:00	-	-	81	81	-	-	162
11:00	12:00	-	-	81	81	-	-	162
12:00	13:00	-	-	81	81	-	-	162
13:00	14:00	-	-	81	81	-	-	162
14:00	15:00	154	-	81	81	-	-	316
15:00	16:00	-	523	81	81	-	-	685
16:00	**17:00**	**-**	-	**81**	**81**	**-**	**-**	**162**
17:00	18:00	-	-	81	81	-	-	162
18:00	19:00	-	-	-	-	-	-	-
19:00	20:00	-	57	-	-	-	-	57
20:00	21:00	-	-	-	-	-	-	-
21:00	22:00	-	-	-	-	-	-	-
22:00	23:00	-	-	-	-	-	-	-
23:00	0:00	-	154	-	-	-	-	154
Total		**840**	**840**	**972**	**972**	**-**	**-**	**3,624**
Summary of Modeled Traffic PCEs								
Construction a.m. (7:00 a.m.– 8:00 a.m.)		**-**	**-**	**81**	**81**	**-**	**-**	**162**
Construction p.m. (4:00 p.m. – 5:00 p.m.)		**-**	**-**	**81**	**81**	**-**	**-**	**162**

NOTES:

1/ Estimate is based on 966 peak day construction employees. An occupancy factor of 1.15 employees per vehicle is included in the employee trip calculations. Employees are allocated between three construction employee parking lots including Lot D (57 percent), Lot K (22 percent), and Lot P (21 percent).

2/ Truck trips (i.e., haul trucks) were converted at a rate of 2.5 PCEs per vehicle. Materials delivery truck trips are allocated between three staging lots including Lot D (31 percent), Lot K (40 percent), and Lot P (29 percent).

3/ 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.

SOURCE: CONNICO, Inc., *Los Angeles World Airports Landside Access Modernization Program, Preliminary Planning Construction Schedule*, May 2016 and *CEQA/NEPA Ground Transportation Program, Los Angeles International Airport, Equipment Analysis*, June 2016.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

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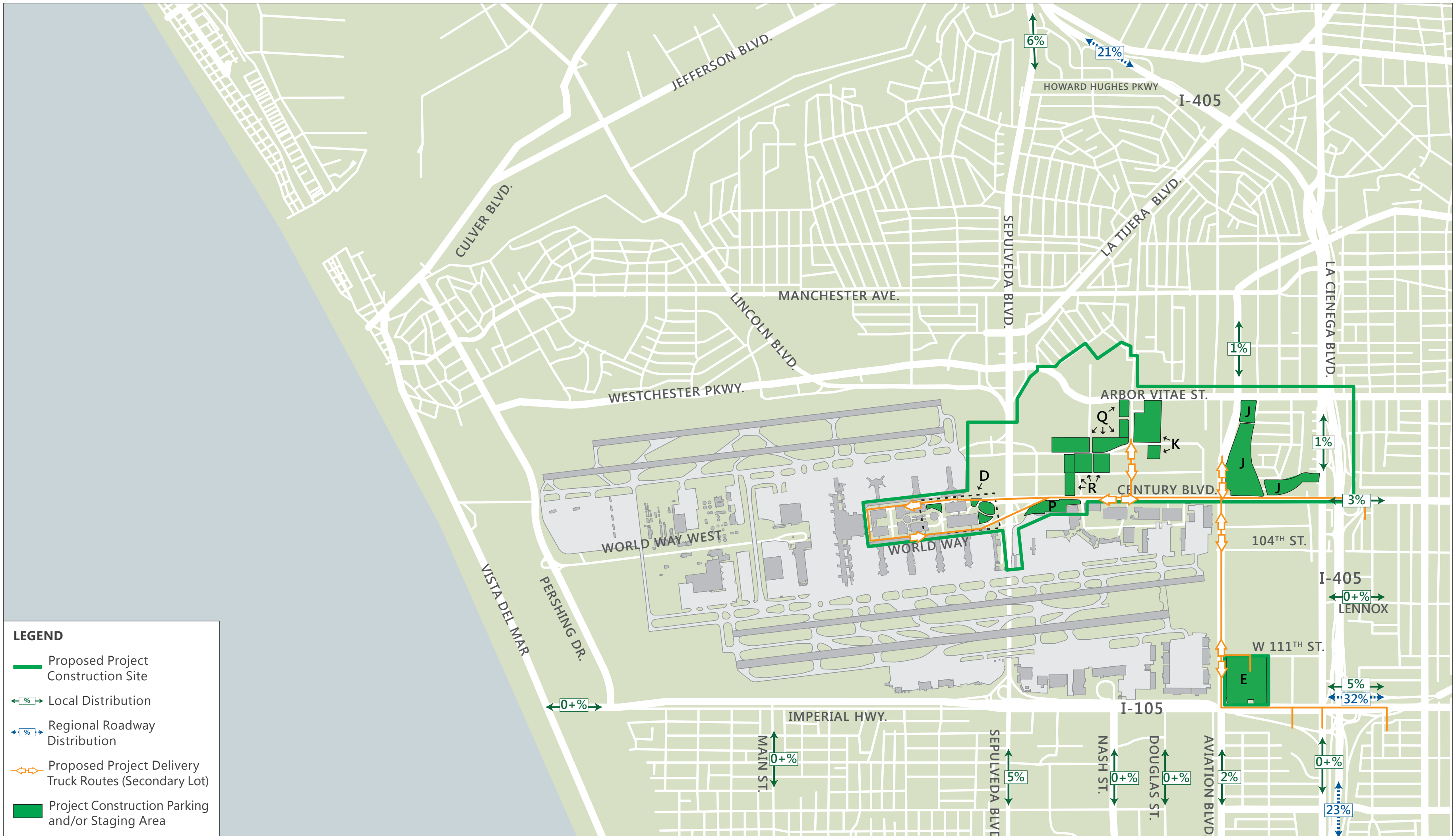

SOURCES: Los Angeles World Airports, Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

NORTH 0 Not to Scale

FIGURE 4.12.3-3

Proposed Project Construction Vehicle Routes & Trip Distribution

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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.[23] As shown in Figure 4.12.3-3, it was estimated that approximately 21 percent of the construction-related 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 vehicles, consisting of construction employee automobiles, 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 Project site during construction via the regional freeway system (I-405 and I-105), Imperial Highway, Aviation Boulevard, Century Boulevard, and World Way. 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 P.4.

4.12.3.5 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 and includes growth in ambient background traffic of both airport and non-airport developments in the vicinity of the Airport. These trips would result from either the construction or the operation of those development projects. 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 were assumed to be represented in the traffic volume data used as a basis for the traffic study. The development schedule and traffic characteristics of larger projects in close proximity to the construction traffic study area were reviewed, and their traffic impacts were incorporated into the cumulative construction traffic impacts analysis.

4.12.3.5.1 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

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23 Unison Consulting Inc., *Los Angeles International Airport 2011 Passenger Survey*, August 2012.

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 2035) and of a nature that would contribute to cumulative traffic impacts were identified.

Table 4.12.3-5 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 Section 3.4 because it includes only projects that would be constructed concurrent with 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.

Table 4.12.3-5: Construction Projects Concurrent with the Proposed Project Construction Period

PROJECT NO.	CONCURRENT CONSTRUCTION PROJECT	ESTIMATED TOTAL CONSTRUCTION COST (MILLIONS)	START DATE	END DATE	ESTIMATED EMPLOYEE HOURS DURING PROJECTS (TOTAL)
N/A 1/	Landside Access Modernization Program (Project) 4/	$5,500	Oct-17	Dec-35	13,100,000
1	Midfield Satellite Concourse North	$1,098	Apr-15	Nov-19	5,732,000
2	Terminal 1.5	$750	Jun-17	Jul-19	1,681,000
3	Terminal 1 Improvements	$375	Aug-14	Dec-18	840,000
4	Runway 7R-25L Rehabilitation	$200	Sep-17	Dec-18	336,000
5	West Aircraft Maintenance Area Project	$67.3	Aug-14	Jan-18	425,000
6	Miscellaneous Projects/Improvements	$945.5	Jan-14	Jul-20	530,000
7	LAX Northside Development 2/	N/A 1/	Apr-16	Jun-25	N/A 1/
8	Terminal 3 (T-3) Connector	$175	Oct-17	Sep-19	393,000
9	Metro Crenshaw / LAX Transit Corridor and Station 3/	$619	Jan-15	Jan-24	1,040,000
10	Airport Security Buildings	$75	Jan-19	Jan-21	126,000
11	South Terminals Improvements	$660	Nov-11	Dec-18	1,479,000
12	Argo Drain Sub-Basin Stormwater Infiltration and Treatment Facility	$7.5	Mar-17	Apr-19	17,000
13	Canine Facility	$10	Jan-18	Jan-19	23,000
14	Secured Area Access Post (SAAP) Project	$4	Mar-18	Mar-19	9,000
15	Terminals 2 and 3 Modernization Project	$1,400	Apr-17	Sep-23	3,138,000
16	Concourse 0	$1,500	Apr-19	Mar-23	3,362,000
17	MSC South Project	$1,000	Jan-20	Jan-25	2,242,000
18	Terminal 2 Improvements	$176	Jan-14	Jan-18	395,000
19	North Airfield Improvements	$200	July-19	Dec-25	336,000

NOTES:

1/ N/A = Not Applicable

2/ Construction traffic estimates based on monthly construction activity estimates provided by Gibson Transportation Consulting, Inc. includes Airport Metro Connector/96th Street Transit Station construction traffic.

3/ Estimated budget and schedule based on information obtained from Crenshaw/LAX Transit Corridor Project Final EIR and project website.

4/ Construction traffic estimates provided by Connico Incorporated.

SOURCES: LAWA, CDM Smith. Connico Incorporated, March 2016; Ricondo & Associates, Inc., July 2016; Los Angeles County Metropolitan Transportation Authority (Metro), 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/crenshaw-feis-feir/ (Metro Crenshaw/LAX Transit Corridor schedule), accessed November 12, 2012.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

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, Terminals 2 and 3 Modernization Project, 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 4.12.3-4 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 January 2020, while the overall cumulative peak during construction of the proposed Project is estimated to occur in November 2019.

The construction traffic analysis assumed a two percent annual growth in background traffic which is anticipated to produce 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.

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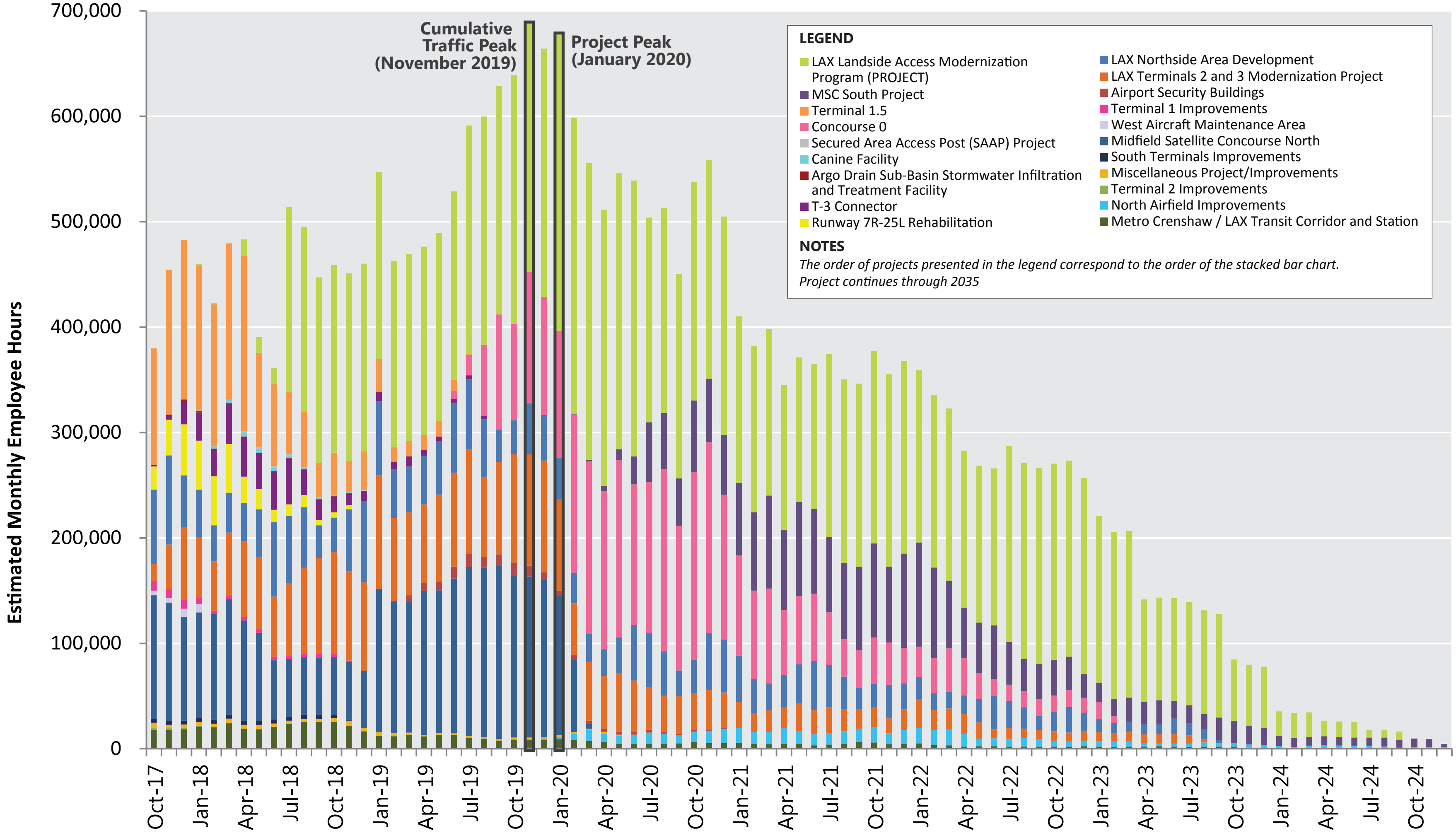

SOURCES: CDM Smith, Gibson Transportation Consulting, Inc. (LAX Northside Area Development), Connico Incorporated (LAX Landside Access Modernization Program), Ricondo & Associates, Inc., (estimated employee hours for all other projects) August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.3-4

Estimated Employee Hours for Proposed Project and Other Concurrent Construction Projects

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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 4.12.3-6**. 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 88 percent of the employee traffic activity during the peak month for the project (January 2020).

Table 4.12.3-6: a.m. and p.m. Peak Hour Traffic PCEs at Overall Cumulative Peak (November 2019) by Project

	CONSTRUCTION TRIPS IN PASSENGER CAR EQUIVALENTS (PCES)											
	AM PEAK HOUR (7:00 A.M. - 8:00 A.M.)						PM PEAK HOUR (4:00 P.M. - 5:00 P.M.)					
	EMPLOYEES [2/]		TRUCKS [3/]		SHUTTLES [4/]		EMPLOYEES [2/]		TRUCKS [3/]		SHUTTLES [4/]	
PROJECT	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**	**IN**	**OUT**
Proposed Project (November 2019) [1/, 6/]	--	--	71	71	-- [8/]	-- [8/]	--	--	71	71	-- [8/]	-- [8/]
Other Concurrent Projects in November 2019 [5/]												
1. Midfield Satellite Concourse North [6/]	353	--	92	92	-- [8/]	-- [8/]	83	353	92	92	-- [8/]	-- [8/]
6. Miscellaneous Projects/Improvements	4	--	1	1	-- [8/]	-- [8/]	--	4	1	1	-- [8/]	-- [8/]
7. LAX Northside Area Development [7/]	234	--	--	--	-- [8/]	-- [8/]	--	234	--	--	-- [8/]	-- [8/]
9. Metro Crenshaw / LAX Transit Corridor and Station	25	--	5	5	-- [8/]	-- [8/]	--	25	5	5	-- [8/]	-- [8/]
10. Airport Security Buildings	32	--	6	6	-- [8/]	-- [8/]	--	32	6	6	-- [8/]	-- [8/]
15. Terminals 2 and 3 Modernization Project [9/]	--	162	15	15	14	14	--	--	15	15	-- [8/]	-- [8/]
16. Concourse 0	380	--	65	65	-- [8/]	-- [8/]	--	380	65	65	-- [8/]	-- [8/]
19. North Airfield Improvements	3	--	1	1	-- [8/]	-- [8/]	--	3	1	1	-- [8/]	-- [8/]
Total for Other Concurrent Projects in November 2019	**1,031**	**162**	**185**	**185**	**14**	**14**	**83**	**1,031**	**185**	**185**	**-- [8/]**	**-- [8/]**

NOTES:

1/ Haul truck trips are split between Lot D (31 percent), Lot K (40 percent), and Lot P (29 percent).

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.

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/ Assumed to operate with a double-shift work schedule.

7/ Peak hour trips provided by Gibson Transportation Consulting.

8/ 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.

9/ Employee estimate is based on 539 construction employees distributed across three shifts. Volumes shown represent employees exiting the employee parking lot after the overnight (late) shift.

SOURCE: Gibson Transportation Consulting, Inc.; Connico Incorporated, May 2016; Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016,

Traffic volumes associated with each concurrent construction project were estimated by calculating the ratio of vehicle trips to employee hours for the Bradley West Project, in addition to other LAWA construction projects, and multiplying this ratio by the estimated total number of employee hours for each project during the cumulative peak month in January 2020, except for those projects where vehicle trips were estimated specifically for those projects (i.e., the LAX Northside Area Development and trips from previous LAWA traffic studies, in particular, the MSC North and Terminals 2 and 3 Modernization Project, which were calculated based on project information). For each of the cumulative projects, with exception of the MSC North Project and Terminals 2 and 3 Modernization Project, 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 Terminals 2 and 3 Modernization 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 except for the Terminals 2 and 3 Modernization Project, 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 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 4.12.3-5**. The contractor employee parking and staging areas for the eight concurrent construction projects during the cumulative peak period are also depicted in Figure 4.12.3-5, 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.

4.12.3.5.2 Planned Transportation Network Improvements

The Bradley West Project EIR identifies several intersection improvements throughout the construction traffic study area to mitigate impacts.[24] 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)

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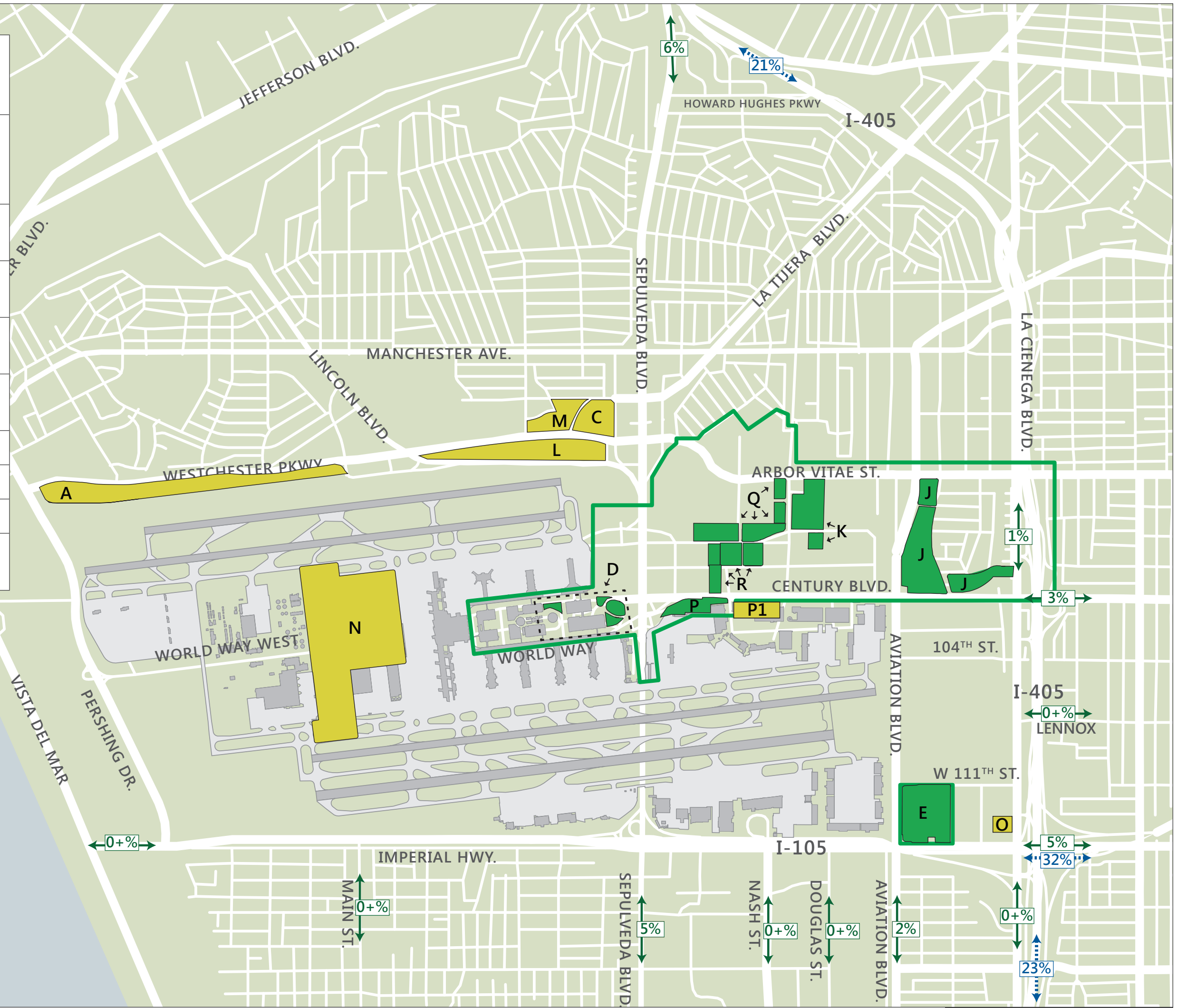
[24] City of Los Angeles, Los Angeles World Airports, *Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project,* Section 4.2.9, (SCH 2008121080), September 2009.

Activity Name[1/]	Construction Employee Parking[2/]	Primary Delivery Staging[2/3/]
LAX Landside Access Modernization Program (PROJECT)	D, P, R, Q, K, J, E	D, P, R, Q, K, J, E
Midfield Satellite Concourse North	N	A, N
Miscellaneous Projects/ Improvements	A	C
LAX Northside Area Development	A, C, M	A, C, M
Terminals 2 and 3 Modernization Project	P1	O
Concourse O	L	L
North Airfield Improvements	A	A
Airport Security Buildings	A, C, M	A, C, M
Metro/Crenshaw/LAX Transit Corridor and Station	J	J

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 4.12.3-4.

2/ Locations provided by CDM Smith and LAWA.

3/ Staging would also occur on project sites



LEGEND

- Proposed Project Construction Site
- Local Distribution
- Regional Roadway Distribution
- Project Construction Parking and/or Staging Area
- Cumulative Projects Construction Parking and/or Staging Area

SOURCES: Los Angeles World Airports, CDM Smith, Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

FIGURE 4.12.3-5

NORTH 0 Not to Scale

Employee Parking and Staging Locations for Proposed Project and Other Projects at Construction Peak

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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.

4.12.3.6 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.

4.12.3.6.1 City of El Segundo Impact Criteria

In the City of El Segundo, an impact is considered significant if the following threshold is exceeded:[25]

- 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.

4.12.3.6.2 City of Inglewood Impact Criteria

In the City of Inglewood, an impact is considered significant if the following threshold is exceeded:[26]

- 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.

4.12.3.6.3 City of Los Angeles Impact Criteria

In accordance with LADOT criteria defined in its *Traffic Study Policy and Procedures*,[27] 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

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25 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.

26 Raju Associates, Inc., *Traffic Study Assumptions and Methodology Memorandum to City of Inglewood*, October 27, 2015.

27 City of Los Angeles Department of Transportation, *Traffic Study Policies and Procedures*, August 2014.

- 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 as potentially required by the project.

The "project-related increase" is defined as the change in the unmitigated LOS 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.

For purposes of this analysis and in accordance with CEQA, proposed Project impacts were determined by comparing the LOS results for the following conditions:

- **Project Impacts -** The direct impacts of the proposed Project are determined by calculating the difference in LOS for the Baseline Plus Peak Project LOS and the Baseline LOS. This comparison is required to isolate the direct impacts of the proposed Project. The difference in v/c is compared to the thresholds identified earlier in this section to determine if the proposed Project would result in a significant impact.
- **Cumulative Impacts -** The cumulative impacts analysis is intended to provide a comparison of future traffic conditions, consisting of traffic generated by all future sources described previously in this document. Cumulative impacts were analyzed using a two-step process. Initially, the cumulative "With Project" LOS condition was compared with the baseline condition to determine if a cumulative impact would occur relative to the baseline. A cumulative impact was deemed significant if it exceeded the allowable threshold of significance defined earlier in this section. If a cumulative impact was determined, then a second comparison was conducted by calculating the difference in v/c for the "With Project" and "Without Project" levels of service to determine the proposed Project's contribution. If the calculated differences in v/c exceed the threshold guidelines defined in this section, then it was determined that the proposed Project component would represent a cumulatively considerable contribution.

4.12.3.6.4 Temporary Traffic, Access, and Transit Impacts during Construction

A significant impact on traffic 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.
- 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*.[28]

4.12.3.7 Impact Analysis

4.12.3.7.1 Impact Comparison 1: Peak Project 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 (January 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. Impact comparisons between the proposed Project's peak traffic added to the baseline compared to the baseline is depicted in **Table 4.12.3-7**. As shown in Table 4.12.3-7, one significant impact would occur during January 2020 under the proposed Project during the p.m. peak hour at Aviation Boulevard and Century Boulevard (Intersection #1).

4.12.3.7.2 Impact Comparison 2: Cumulative 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 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.

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[28] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

[DRAFT]

Table 4.12.3-7 (1 of 2): Proposed Project - Level of Service Analysis Results - Impact Comparison 1 Baseline Compared to Project Plus Baseline

			BASELINE		PROJECT PLUS BASELINE			
INTERSECTION		PEAK HOUR[1/]	V/C[2/]	LOS[3/]	V/C[2/]	LOS[3/]	CHANGE IN V/C	SIGNIFICANT IMPACT
1.	Aviation Boulevard and Century Boulevard	AM Peak Hour	0.522	A	0.554	A	0.032	--
		PM Peak Hour	0.736	C	0.781	C	0.045	Yes
2.	Imperial Highway and Aviation Boulevard	AM Peak Hour	0.628	B	0.687	B	0.059	--
		PM Peak Hour	0.577	A	0.596	A	0.019	--
3.	Aviation Boulevard and 111th Street	AM Peak Hour	0.475	A	0.504	A	0.029	--
		PM Peak Hour	0.423	A	0.441	A	0.018	--
4.	La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.722	C	0.722	C	0.000	--
		PM Peak Hour	0.802	D	0.807	D	0.005	--
5.	Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.727	C	0.727	C	0.000	--
		PM Peak Hour	0.645	B	0.645	B	0.000	--
6.	Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.824	D	0.824	D	0.000	--
		PM Peak Hour	0.608	B	0.612	B	0.004	--
7.	Imperial Highway and Douglas Street	AM Peak Hour	0.343	A	0.343	A	0.000	--
		PM Peak Hour	0.551	A	0.551	A	0.000	--
8.	Sepulveda Boulevard and Howard Hughes Pkwy.	AM Peak Hour	0.591	A	0.591	A	0.000	--
		PM Peak Hour	0.578	A	0.578	A	0.000	--
9.	Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.415	A	0.420	A	0.005	--
		PM Peak Hour	0.620	B	0.620	B	0.000	--
10.	Imperial Highway and Main Street	AM Peak Hour	0.542	A	0.542	A	0.000	--
		PM Peak Hour	0.554	A	0.554	A	0.000	--
11.	Imperial Highway and Pershing Drive	AM Peak Hour	0.375	A	0.375	A	0.000	--
		PM Peak Hour	0.441	A	0.441	A	0.000	--
12.	Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.826	D	0.826	D	0.000	--
		PM Peak Hour	1.183	F	1.183	F	0.000	--
13.	Imperial Highway and Nash Street	AM Peak Hour	0.540	A	0.540	A	0.000	--
		PM Peak Hour	0.337	A	0.337	A	0.000	--
14.	Imperial Highway and I-105 Ramp	AM Peak Hour	0.716	C	0.754	C	0.038	--
		PM Peak Hour	0.493	A	0.515	A	0.022	--
15.	Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.532	A	0.538	A	0.006	--
		PM Peak Hour	0.749	C	0.749	C	0.000	--
16.	La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.486	A	0.486	A	0.000	--
		PM Peak Hour	0.470	A	0.470	A	0.000	--

[DRAFT]

Table 4.12.3-7 (2 of 2): Proposed Project - Level of Service Analysis Results - Impact Comparison 1 Baseline Compared to Project Plus Baseline

INTERSECTION		PEAK HOUR[1/]	BASELINE V/C[2/]	BASELINE LOS[3/]	PROJECT PLUS BASELINE V/C[2/]	PROJECT PLUS BASELINE LOS[3/]	CHANGE IN V/C	SIGNIFICANT IMPACT
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.314	A	0.314	A	0.000	--
		PM Peak Hour	0.264	A	0.264	A	0.000	--
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.799	C	0.799	C	0.000	--
		PM Peak Hour	0.671	B	0.671	B	0.000	--
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.393	A	0.393	A	0.000	--
		PM Peak Hour	0.308	A	0.308	A	0.000	--
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.445	A	0.453	A	0.008	--
		PM Peak Hour	0.255	A	0.263	A	0.008	--
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.610	B	0.610	B	0.000	--
		PM Peak Hour	0.729	C	0.729	C	0.000	--
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.688	B	0.688	B	0.000	--
		PM Peak Hour	0.860	D	0.860	D	0.000	--
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.764	C	0.764	C	0.000	--
		PM Peak Hour	0.789	C	0.789	C	0.000	--
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.414	A	0.414	A	0.000	--
		PM Peak Hour	0.247	A	0.247	A	0.000	--
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.763	C	0.763	C	0.000	--
		PM Peak Hour	0.796	C	0.796	C	0.000	--
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.809	D	0.809	D	0.000	--
		PM Peak Hour	0.431	A	0.431	A	0.000	--
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.688	B	0.688	B	0.000	--
		PM Peak Hour	0.446	A	0.446	A	0.000	--
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.566	A	0.566	A	0.000	--
		PM Peak Hour	0.404	A	0.404	A	0.000	--
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.327	A	0.327	A	0.000	--
		PM Peak Hour	0.359	A	0.359	A	0.000	--

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).

4/ -- Indicates "No Significant Impact"

SOURCE: Ricondo & Associates, Inc., using TRAFFIX, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

The impact comparison for this condition is depicted in **Table 4.12.3-8**. As shown in the table, 17 intersections would be significantly impacted during the cumulative peak construction period (November 2019), and the proposed Project's contribution to such significant cumulative impacts would be cumulatively considerable at the following three intersections:

- Aviation Boulevard and Century Boulevard (Intersection #1) – p.m. peak hour
- Imperial Highway and Aviation Boulevard (Intersection #2) – a.m. peak hour
- Imperial Highway and I-105 Ramp (Intersection #14) – a.m. peak hour

4.12.3.7.3 LAX Landside Access Modernization Program Phase 2 Components

Phase 2 of the LAX Landside Access Modernization Program includes the reconstruction of the Sepulveda Boulevard/Century Boulevard Airport entrance ramp system and the potential development of commercial development located near the future CONRAC, ITF East, APM MSF, and ITF West sites. Development of these areas would occur after 2024. The potential future related development is anticipated to be up to 900,000 sf in size and could include a hotel, office space, conference center, restaurants, and/or retail spaces, with construction estimated to begin in 2025.

Based on the construction employment schedules developed for the Project, construction employees required for Phase 2 components would be approximately 20 percent of the peak employment (approximately 200 employees) that is anticipated to occur in January 2020. Material hauling trucks would be required throughout construction of the Phase 2 components; however, the magnitude of daily trips would be significantly less (approximately 20 percent) than those anticipated during the Project peak. Similarly, the required employment for the Phase 2 components would be significantly less than those during the cumulative peak period (November 2019). Therefore, it is estimated that trips associated with 200 employees would not result in LOS impacts that would exceed the significance thresholds of affected jurisdictions. Thus, no significant off-Airport impacts would occur as a result of the construction traffic associated with the construction of the Phase 2 components or the potential future related development.

4.12.3.7.4 Temporary Traffic, Access, and Transit Impacts during Construction

Construction activities and related construction vehicle trips associated with the proposed Project would impact on-Airport and off-Airport traffic roadway operations. Construction-related traffic generated within the CTA would generally be associated with the reconstruction of Parking Garages P2A, P2B, and P5, and construction of the APM guideway, APM stations, and associated improvements such as pedestrian walkways. This activity would add to existing traffic volumes within the CTA, which, in turn, could adversely affect roadway link and pedestrian flows. The development of the other components of the proposed Project such as the APM guideway and stations east of Sepulveda Boulevard, the APM MSF, CONRAC, ITFs, and most of the roadway improvements would occur outside of the CTA. This activity would add to existing traffic volumes on roadways surrounding LAX, which, in turn, could adversely affect vehicle, transit, bicycle, and pedestrian flows.

[DRAFT]

Table 4.12.3-8 (1 of 2): Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019)

INTERSECTION	PEAK HOUR[1/]	BASELINE [A] V/C[2/]	BASELINE [A] LOS[3/]	CUMULATIVE PEAK (NOVEMBER 2019) WITHOUT PROJECT [B] V/C[2/]	WITHOUT PROJECT [B] LOS[3/]	CUMULATIVE PEAK (NOVEMBER 2019) WITH PROJECT[1/] [C] V/C[2/]	WITH PROJECT [C] LOS[3/]	CUMULATIVE IMPACT DETERMINATION [C]-[A] CHANGE IN V/C	CUMULATIVE IMPACT DETERMINATION [C]-[A] SIGNFICANT CUMULATIVE IMPACT?	CUMULATIVELY CONSIDERABLE DETERMINATION [C]-[B] CHANGE IN V/C	CUMULATIVELY CONSIDERABLE DETERMINATION [C]-[B] CUMULATIVELY CONSIDERABLE CONTRIBUTION?
1. Aviation Boulevard and Century Boulevard	AM Peak Hour	0.522	A	0.602	B	0.630	B	0.108	--	0.028	--
	PM Peak Hour	0.736	C	0.855	D	0.894	D	0.158	Yes	0.039	Yes
2. Imperial Highway and Aviation Boulevard	AM Peak Hour	0.628	B	0.698	B	0.750	C	0.122	Yes	0.052	Yes
	PM Peak Hour	0.577	A	0.686	B	0.703	C	0.126	Yes	0.017	--
3. Aviation Boulevard and 111th Street	AM Peak Hour	0.475	A	0.526	A	0.552	A	0.077	--	0.026	--
	PM Peak Hour	0.423	A	0.471	A	0.486	A	0.063	--	0.015	--
4. La Cienega Boulevard and Century Boulevard	AM Peak Hour	0.722	C	0.788	C	0.788	C	0.066	Yes	0.000	--
	PM Peak Hour	0.802	D	0.920	E	0.920	E	0.118	Yes	0.000	--
5. Sepulveda Blvd. and Century Blvd.	AM Peak Hour	0.727	C	0.870	D	0.870	D	0.143	Yes	0.000	--
	PM Peak Hour	0.645	B	0.708	C	0.708	C	0.063	Yes	0.000	--
6. Century Boulevard and I-405 Northbound Ramp	AM Peak Hour	0.824	D	0.921	E	0.921	E	0.097	Yes	0.000	--
	PM Peak Hour	0.608	B	0.682	B	0.683	B	0.075	--	0.001	--
7. Imperial Highway and Douglas Street	AM Peak Hour	0.343	A	0.427	A	0.427	A	0.084	--	0.000	--
	PM Peak Hour	0.551	A	0.653	B	0.653	B	0.102	--	0.000	--
8. Sepulveda Boulevard and Howard Hughes Parkway	AM Peak Hour	0.591	A	0.699	B	0.699	B	0.108	--	0.000	--
	PM Peak Hour	0.578	A	0.637	B	0.637	B	0.059	--	0.000	--
9. Imperial Highway and La Cienega Boulevard	AM Peak Hour	0.415	A	0.469	A	0.477	A	0.062	--	0.008	--
	PM Peak Hour	0.620	B	0.690	B	0.690	B	0.070	--	0.000	--
10. Imperial Highway and Main Street	AM Peak Hour	0.542	A	1.101	F	1.101	F	0.559	Yes	0.000	--
	PM Peak Hour	0.554	A	0.784	C	0.784	C	0.230	Yes	0.000	--
11. Imperial Highway and Pershing Drive	AM Peak Hour	0.375	A	0.483	A	0.483	A	0.108	--	0.000	--
	PM Peak Hour	0.441	A	0.679	B	0.679	B	0.238	--	0.000	--
12. Imperial Highway and Sepulveda Boulevard	AM Peak Hour	0.826	D	1.021	F	1.021	F	0.195	Yes	0.000	--
	PM Peak Hour	1.183	F	1.354	F	1.354	F	0.171	Yes	0.000	--
13. Imperial Highway and Nash Street	AM Peak Hour	0.540	A	0.773	C	0.773	C	0.233	Yes	0.000	--
	PM Peak Hour	0.337	A	0.420	A	0.420	A	0.083	--	0.000	--
14. Imperial Highway and I-105 Ramp	AM Peak Hour	0.716	C	0.862	D	0.895	D	0.179	Yes	0.033	Yes
	PM Peak Hour	0.493	A	0.576	A	0.595	A	0.102	--	0.019	--
15. Imperial Highway and I-405 Northbound Ramp	AM Peak Hour	0.532	A	0.588	A	0.593	A	0.061	--	0.005	--
	PM Peak Hour	0.749	C	0.823	D	0.823	D	0.074	Yes	0.000	--
16. La Cienega Boulevard and Lennox Boulevard	AM Peak Hour	0.486	A	0.535	A	0.535	A	0.049	--	0.000	--
	PM Peak Hour	0.470	A	0.516	A	0.516	A	0.046	--	0.000	--

[DRAFT]

Table 4.12.3-8 (2 of 2): Proposed Project - Level of Service Analysis Results - Impact Comparison 2 Cumulative Traffic (November 2019)

			BASELINE [A]		CUMULATIVE PEAK (NOVEMBER 2019) WITHOUT PROJECT [B]		CUMULATIVE PEAK (NOVEMBER 2019) WITH PROJECT[1/] [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?
17.	La Cienega Boulevard and 111th Street	AM Peak Hour	0.314	A	0.348	A	0.348	A	0.034	--	0.000	--
		PM Peak Hour	0.264	A	0.291	A	0.291	A	0.027	--	0.000	--
18.	La Cienega Blvd. & I-405 Southbound Ramps North of Century	AM Peak Hour	0.799	C	0.872	D	0.872	D	0.073	Yes	0.000	--
		PM Peak Hour	0.671	B	0.732	C	0.732	C	0.061	Yes	0.000	--
19.	La Cienega Blvd. & I-405 Southbound Ramps South of Century	AM Peak Hour	0.393	A	0.450	A	0.450	A	0.057	--	0.000	--
		PM Peak Hour	0.308	A	0.365	A	0.365	A	0.057	--	0.000	--
20.	La Cienega Blvd. & I-405 Southbound Ramps North of Imperial	AM Peak Hour	0.445	A	0.500	A	0.507	A	0.062	--	0.007	--
		PM Peak Hour	0.255	A	0.296	A	0.304	A	0.049	--	0.008	--
21.	Sepulveda Boulevard and La Tijera Boulevard	AM Peak Hour	0.610	B	0.674	B	0.674	B	0.064	--	0.000	--
		PM Peak Hour	0.729	C	0.815	D	0.815	D	0.086	Yes	0.000	--
22.	Sepulveda Boulevard and Lincoln Boulevard	AM Peak Hour	0.688	B	0.754	C	0.754	C	0.066	Yes	0.000	--
		PM Peak Hour	0.860	D	1.022	F	1.022	F	0.162	Yes	0.000	--
23.	Sepulveda Boulevard and Manchester Avenue	AM Peak Hour	0.764	C	0.836	D	0.836	D	0.072	Yes	0.000	--
		PM Peak Hour	0.789	C	0.927	E	0.927	E	0.138	Yes	0.000	--
24.	Westchester Parkway and Pershing Drive	AM Peak Hour	0.414	A	0.610	B	0.610	B	0.196	--	0.000	--
		PM Peak Hour	0.247	A	0.548	A	0.548	A	0.301	--	0.000	--
25.	Sepulveda Boulevard and Westchester Parkway	AM Peak Hour	0.763	C	1.014	F	1.014	F	0.251	Yes	0.000	--
		PM Peak Hour	0.796	C	1.091	F	1.091	F	0.295	Yes	0.000	--
26.	Sepulveda Boulevard and 76th/77th Street	AM Peak Hour	0.809	D	0.884	D	0.884	D	0.075	Yes	0.000	--
		PM Peak Hour	0.431	A	0.534	A	0.534	A	0.103	--	0.000	--
27.	Sepulveda Boulevard and 79th/80th Street	AM Peak Hour	0.688	B	0.753	C	0.753	C	0.065	Yes	0.000	--
		PM Peak Hour	0.446	A	0.551	A	0.551	A	0.105	--	0.000	--
28.	Sepulveda Boulevard and 83rd Street	AM Peak Hour	0.566	A	0.621	B	0.621	B	0.055	--	0.000	--
		PM Peak Hour	0.404	A	0.505	A	0.505	A	0.101	--	0.000	--
29.	La Cienega Boulevard and 104th Street	AM Peak Hour	0.327	A	0.361	A	0.361	A	0.034	--	0.000	--
		PM Peak Hour	0.359	A	0.395	A	0.395	A	0.036	--	0.000	--

NOTES:

1/ The hours of analysis include the a.m. peak (7:00 a.m. - 8:00 a.m.), and the p.m. peak hour (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).

4/ -- Indicates "No Significant Cumulative Impact", "No Cumulatively Considerable Contribution".

SOURCE: Ricondo & Associates, Inc., using TRAFFIX, August 2016.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

To the extent that Project-related construction within the CTA would require temporary lane closures and detours, on-Airport traffic conditions could be impacted. Construction-related impacts to the on-Airport surface transportation system could result in substantial congestion and inconvenience to motorists and pedestrians on a regular or frequent basis. To minimize impacts to the CTA roadway system and Airport operations during construction, the Project components located within the CTA would be constructed over an 18-hour/day schedule with two shifts. The "night" shift would occur from approximately 1 a.m. to 9 a.m. and the "day" shift would occur from approximately 9 a.m. to 7 p.m., with minimal construction occurring between 7 p.m. and 1 a.m. Approximately 65 percent of construction activity within the CTA would occur during the 8-hour night shift, when traffic levels are low, and 35 percent would occur during the 10-hour day shift. Delivery of construction materials would occur during the night shift, as would most lane closures. Construction activities during the day shift would largely consist of activities that could proceed without requiring lane closures or significantly disrupting Airport operations.

The majority of the construction activity associated with the proposed Project within the CTA would primarily occur along the Center Way corridor; thus, curbside impacts along World Way in front of the passenger terminals would be minimized. A portion of the vehicular traffic exiting the parking structures along Center Way would be detoured to use World Way South, which may cause some vehicle congestion along World Way South.

Project-related construction outside the CTA would require temporary lane closures and detours, particularly when roadway improvements to Century Boulevard, Airport Boulevard, Aviation Boulevard, Arbor Vitae Street, and W. 98th Street are constructed and when the APM guideway is constructed over existing streets. Construction-related impacts to the off-Airport surface transportation system could result in substantial congestion and inconvenience to motorists and pedestrians on a regular or frequent basis. Construction activity outside of the CTA would occur during two 8-hour shifts/work day (16 hours/day): a morning shift from approximately 7 a.m. to 3 p.m., and an evening shift from approximately 3 p.m. to 11 p.m. For construction of the APM guideway outside of the CTA, approximately 60 percent of construction would occur during the morning shift and 40 percent during the evening shift. For construction of all other elements (excluding the APM guideway), approximately 80 percent would occur during the morning shift and 20 percent during the evening shift. To the extent feasible, most lane closures would occur during off-peak and evening hours. Construction activities during the day shift would largely consist of activities that could proceed without requiring lane closures or significantly disrupting area traffic.

The majority of the construction activity associated with the proposed Project outside of the CTA would primarily occur in the Manchester Square area and along W. 96th Street. Access to businesses and hotels located adjacent to the construction areas would be maintained throughout the construction period, although detours or temporary access points may be required during certain phases of construction.

Construction of the proposed Project could result in the closure of one or more lanes of a major off-Airport traffic carrying street for an extended length of time. Construction for roadway improvements within the Project areas may also require partial roadway closures at the various off-Airport cross streets and adjoining streets. In addition to lane and roadway restrictions, crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. The proposed Project would also require the re-routing of buses, the relocation of the LAX City Bus Center, and the relocation of bus stops.

Based on the above analysis, construction of the proposed Project would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Airport. Impacts to traffic, access, and transit during construction would therefore be significant.

4.12.3.8 Mitigation Measures

As described in Section 4.12.3.7, Project-related construction would cause one significant direct construction-related traffic impact (Intersection #1), and would result in cumulatively considerable contributions to three significantly impacted intersections (Intersections #1, #2, and #14) and would result in significant impacts to traffic, access, and transit during construction.

The task of managing traffic congestion within the CTA and the adjacent off-Airport roadways during Project construction, particularly for the APM construction phases, would be challenging. Proactive decision-making would be important; however, given the scale and scope of the effort, plus the CTA's existing traffic congestion issues, the ability to quickly assess and address traffic congestion would be equally or more important. Traffic control strategies would focus on both private and commercial vehicles accessing the CTA; however, LAWA's ability to control commercial vehicles would be greater than its ability to control private vehicle drivers. The following mitigation measures are proposed to reduce this significant impact.

- **MM-ST (LAMP)-1. Construction Traffic Project Task Force.** LAWA would establish a Project Task Force specific to the LAX Landside Access Modernization Program to coordinate deliveries, monitor traffic conditions, advise motorists about detours and congested areas, and monitor and enforce delivery times and routes. The Project Task Force could be comprised of key stakeholders from LAWA, the Coordination and Logistic Management Team (CALM), other City departments, and others as deemed appropriate. This Project Task Force would review traffic management plans to mitigate traffic impacts on public roadways and the CTA where possible. The Project Task Force would review the traffic management plans and work plans to ensure:
    - Coordination with all other LAWA construction projects;
    - Coordination with other public infrastructure projects;
    - Detour impact analysis for pedestrian, business, bicycle, and traffic flow;
    - Coordinate closures and restricted access with all potential special events and holiday traffic flow;
    - Notification to the public with use of static signage, changeable message signs, media announcements, Airport website, etc.;
    - Work with LAWA police and the Los Angeles Police Department to enforce delivery times and routes;
    - Coordinate with police and fire personnel regarding maintenance of emergency access and response times;
    - Monitor and coordinate deliveries;

- Establish detour routes;
- Work with residential and commercial neighbors regarding upcoming construction activities; and
- Analyze traffic conditions to determine the need for additional traffic signals, signs, lane restriping, signal modifications, etc.

The Project Task Force would develop a comprehensive and long-term communication and construction impact outreach strategy for implementation during construction. The Task Force would work closely with other LAWA departments, including Public Relations, Planning and Development, and Operations. The Task Force would also ensure that an innovative and effective construction outreach and communication strategy is developed to keep key stakeholders, businesses, and residents notified and informed during construction of the proposed Project.

Prior to initiation of construction, contractors would be required to complete Worksite Traffic Control Plans (WTCP). The WTCP would include a description of how the contractor will manage all construction-related traffic. The WTCP would 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 WTCP would require approval of the Project Task Force as well as any appropriate agencies and departments. Contractor compliance would be monitored throughout the duration of their contract. LAWA would require contractors to implement and comply with the following WTCP measures to reduce construction-related traffic impacts associated with projects at LAX, including:

<u>Designated Truck Delivery Hours</u>

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. Peak Airport traffic periods occur throughout most of the day, therefore, to the extent possible, truck delivery hours shall be limited to overnight hours from 1:00 a.m. to 9:00 a.m.

<u>Designated Truck Routes</u>

For dirt, aggregate, bulk cement, and all other materials and equipment, truck deliveries would be on designated routes only (freeways and non-residential streets).

Designated truck routes are limited to:

- Aviation Boulevard (Imperial Highway to Manchester Boulevard)
- Manchester Boulevard (Aviation Boulevard to I-405)
- Florence Avenue (Aviation Boulevard to I-405)

- La Cienega Boulevard (north of Imperial Highway)
- Pershing Drive (Westchester Parkway to Imperial Highway)
- Westchester Parkway (Pershing Drive to Sepulveda Boulevard)
- Century Boulevard (Sepulveda Boulevard to Aviation Boulevard)
- Sepulveda Boulevard (Westchester Parkway to Imperial Highway)
- Imperial Highway (Pershing Drive to I-405)
- I-405
- I-105

<u>Stockpile Locations</u>

All stockpile locations must be pre-approved by LAWA. Stockpile locations/laydown/staging areas shall be accessed by construction vehicles with minimal disruption near residential neighborhoods.

- **MM-ST (LAMP)-2. Maintenance of Traffic.** To ensure that continued vehicular access to community facilities is maintained, the contractor shall provide at least one lane of traffic in each direction on access cross streets that are not going to be dead-ended during construction. If one lane of traffic cannot be maintained, the contractor shall provide a detour route for motorists.
- **MM-ST (LAMP)-3. Worksite Traffic Control Plans.** Before the start of construction, Worksite Traffic Control Plans (WTCP) and Traffic Circulation Plans, including identification of detour requirements, will be formulated in cooperation with the affected municipalities and other jurisdictions (County, State) in accordance with the Work Area Traffic Control Handbook (WATCH) manual and the California Manual on Uniform Traffic Control Devices (MUTCD)[29] as required by the relevant municipality. The WTCPs will be based on lane requirements and other special requirements defined by the Los Angeles City Department of Transportation (LADOT), the affected municipalities for construction within their City and from other appropriate agencies for construction in those jurisdictions. The WTCP's shall be designed to maintain designated Safe Routes to School wherever possible during times of the year when nearby schools are in session. The WTCP's shall be reviewed and coordinated with the LAWA Project Task Force 30 days in advance of any restriction or closure.
- **MM-ST (LAMP)-4. Roadway Closure Restrictions.** No designated major or secondary highway will be closed to vehicular or pedestrian traffic except at night or on weekends, unless approval is granted by the jurisdiction in which it is located.

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[29] California State Transportation Agency, Department of Transportation, *California Manual on Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California*, 2014 Edition (including Revision 1), November 7, 2014.

- **MM-ST (LAMP)-5. Traffic Maintenance During Construction.** The following would be implemented during construction when the Project Task Force and appropriate City departments or local jurisdictions deem necessary:
  - A flagperson shall be placed at the truck entry and exit from the Project site.
  - Deliveries and pick-ups of construction materials shall be scheduled during non-peak travel periods to the degree possible and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
  - Access shall remain unobstructed for land uses in proximity to the Project site during construction.
  - Unless otherwise specified in the WTCP, the contractor shall maintain access to the businesses that rely on on-street parking and pedestrian access during construction. If it is necessary to temporarily restrict access to a business, the contractor shall provide the facility advance notice of restrictions. Unless otherwise specified in the WTCP, the contractor shall schedule access restrictions to off-peak hours or during times when the business is closed and shall not fully restrict access for the total hours of operation of business on any given day of operation.
  - Relative to maintaining access to businesses, construction activities shall be sequenced to minimize the temporary removal of multiple blocks of on-street parking at one time unless otherwise specified by the WTCP.
  - Contractors shall use temporary special signage to inform the public of closure information in advance of temporary closures. Signage shall also provide special access directions, if warranted.
  - Notice of closure will be prepared by the contractor with legible maps and reviewed prior to dissemination by the Project Task Force.
  - A construction management plan shall be developed by the contractor and will be implemented during construction, to include the following:
  - Establish requirements for the loading, unloading, and storage of materials on the Project site
  - Coordinate with the City and emergency and safety service providers to ensure adequate access is maintained to the project site and neighboring businesses.

In addition to the mitigation measures identified above, the contractor would be required to comply with City and local jurisdiction guidelines and regulations.

4.12.3.9 Level of Significance after Mitigation

Table 4.12.3-9 presents the v/c and LOS for the one intersection (Intersection #1) under the Baseline Plus Project condition that would be significantly impacted, while **Table 4.12.3-10** presents the v/c and LOS for the three intersections (Intersection #1, #2, and #14) under the Cumulative Plus Project condition for which the proposed Project would have a cumulatively considerable contribution.

As shown in Tables 4.12.3-9 and 4.12-10, with implementation of Mitigation Measures MM-ST (LAMP)-1, MM-ST (LAMP)-2, MM-ST (LAMP)-3, MM-ST (LAMP)-4, and MM-ST (LAMP)-5 the Project-related construction traffic impacts on intersection (Intersection #1) would be reduced to a level that is less than significant and the proposed Project's contribution to the three intersections with significant cumulative impacts (Intersections #1, #2 and #14) would not be cumulatively considerable.

However, significant impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route would be reduced, but may not to a level that would be less than significant. No other feasible mitigation measures have been identified at this time that would reduce impacts further. Therefore, impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route from Project-related construction would be significant and unavoidable.

Table 4.12.3-9: Proposed Project - Level of Service Analysis Results – Mitigation Results Baseline Plus Project Condition

		BASELINE [A]		PROJECT PLUS BASELINE PRE MITIGATION [B]		PROJECT PLUS BASELINE WITH MITIGATION [C]		WITH MITIGATION CHANGE IN V/C [C] – [A]	SIGNIFICANT IMPACT
INTERSECTION	PEAK HOUR[1/]	V/C[2/]	LOS[3/]	V/C[2/]	LOS[3/]	V/C[2/]	LOS[3/]		
1. Aviation Boulevard and Century Boulevard	PM Peak Hour	0.736	C	0.781	C	0.736	C	0.000	--

NOTES:

1/ The hours of analysis include the p.m. peak (4:00 p.m. - 5:00 p.m.).

2/ Volume to capacity ratio. Includes an LADOT ATSAC benefit applied at the intersection.

3/ Level of Service range: A (excellent) to F (failure).

4/ -- Indicates "No Significant Impact".

SOURCE: Ricondo & Associates, Inc., using TRAFFIX, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

[DRAFT]

Table 4.12.3-10: Proposed Project - Level of Service Analysis Results – Mitigation Results Cumulative Plus Project Condition

		CUMULATIVE PEAK (NOVEMBER 2019)											
		BASELINE		WITHOUT PROJECT		WITH PROJECT PRE-MITIGATION		WITH PROJECT WITH MITIGATION[1/]		CUMULATIVE IMPACT DETERMINATION		CUMULATIVELY CONSIDERABLE DETERMINATION	
		[A]		[B]		[C]		[D]		[D]-[A]		[D]-[B]	
INTERSECTION (CONDITION)	PEAK HOUR[1/]	V/C[2/]	LOS[3/]	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	PM Peak Hour	0.736	C	0.855	D	0.894	D	0.855	D	0.119	Yes	0.000	--
2. Imperial Highway and Aviation Boulevard	AM Peak Hour	0.628	B	0.698	B	0.750	C	0.698	B	0.070	--	0.000	--
14. Imperial Highway and I-105 Ramp	AM Peak Hour	0.716	C	0.862	D	0.895	D	0.862	D	0.146	Yes	0.000	--

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.

3/ Level of Service range: A (excellent) to F (failure).

4/ -- Indicates "No Significant Cumulative Impact", "No Cumulatively Considerable Contribution".

SOURCE: Ricondo & Associates, Inc., using TRAFFIX, August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

4.13 Utilities and Service Systems

4.13.1 INTRODUCTION

This utilities and service systems section addresses the capacity and demand for energy and water utilities (water and wastewater) associated with the proposed Project as well as the potential for conflicts between the proposed Project and existing utility-related infrastructure that would result in environmental impacts. The existing utility conditions relevant to energy, water and wastewater in the Project area are described, along with the methodology and the regulatory framework that guided the evaluation of utilities and service systems. Impacts to utilities and service systems that would result from the proposed Project are identified.

The proposed Project's impacts on stormwater drainage facilities are discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*.

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 utilities and services systems. For two of these screening thresholds, the Initial Study found that the proposed Project would have "less than significant impacts", and thus, no further analysis of these topics in an EIR was required. The following Initial Study screening criteria related to landfills and solid waste do not require any additional analysis in this EIR:

- Potential impacts related to a substantial adverse effect on the permitted capacity of Los Angeles County landfills that would accommodate the project's solid waste disposal needs were evaluated and determined to have a "Less Than Significant Impact" in the Initial Study. As discussed therein, the total remaining permitted inert waste capacity in Los Angeles County is sufficient to accommodate the proposed Project's solid waste disposal needs from construction and demolition activities. Further, the proposed Project would comply with federal, state, and local statutes and regulations related to solid waste, as well as Los Angeles World Airport's (LAWA's) recycling program, and no significant impact to landfill capacity would occur.
- Potential impacts related to a substantial adverse effect on LAWA's ability to comply with federal, state, and local statutes and regulations related to solid waste were evaluated and determined to have a "Less Than Significant Impact" in the Initial Study. The proposed Project would comply with federal, state, and local statutes and regulations related to solid waste, as well as LAWA's recycling program, and no significant impact related to compliance with solid waste statutes and regulations would occur.

4.13.2 ENERGY/APPENDIX F

4.13.2.1 Introduction

Appendix F of the State CEQA Guidelines requires an EIR to consider the potentially significant energy impacts of a proposed project. Construction and operation of the proposed Project would consume energy in the form of electricity, natural gas and other petrochemical fuels used in transportation. This section addresses the infrastructure capacity and demand associated with the energy consumption of the proposed Project, potential conflicts between the proposed Project and existing energy infrastructure that would result in environmental impacts, and energy conservation and measures included in the proposed Project to reduce wasteful, inefficient, and unnecessary consumption of energy, consistent with CEQA Guidelines Appendix F. Air quality and greenhouse gas (GHG) emissions associated with energy production, i.e., production of electricity and the combustion of fuels, are accounted for in the impact analyses in Sections 4.2, Air Quality and 4.5, Greenhouse Gas Emissions.

4.13.2.2 Methodology

This analysis compares energy consumption associated with the proposed Project to LAX-related energy consumption under baseline (2015) conditions. Demand has been estimated based on generation factors for use type or on specifications for similar facilities at other locations. In addition, through preliminary consultation with utility system providers and review of other documentation, existing utility infrastructure within the Project area has been identified. The proposed location of each Project component has been compared to the location of existing utility infrastructure to identify potential points of conflict. This analysis also considers the ability of the proposed Project to avoid or reduce energy consumption through conservation programs and efficiency features.

4.13.2.3 Regulatory Framework

4.13.2.3.1 Federal Regulations and Directives

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.

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

In April 2010, the U.S. Environmental Protection Agency (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, carbon dioxide (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

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.[1]

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.[2]

4.13.2.3.2 State Regulations and Directives

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 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.[3] 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.

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

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1 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.

2 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.

3 2016 Energy Standards were made in June 2015 and will go into effect on January 1, 2017.

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.[4]

AB 32 Scoping Plan, Executive Order S-01-07 and the Low Carbon Fuel Standard

Under the AB 32 Scoping Plan, CARB identified the Low Carbon Fuel Standard (LCFS) as one of the nine discrete early action measures to reduce California's GHG emissions that cause climate change. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives. Executive Order S-1-07 (issued on January 18, 2007), called for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. 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.

CARB approved the LCFS regulation in 2009 and began implementation on January 1, 2011. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, CARB approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted.

California Green Buildings Standards Code

Adopted in 2010, and updated annually, the California Green Building Standards Code (CALGreen) is found in Part 11, Title 24 of the CCR. The purpose of CALGreen is to cause a reduction in GHG emissions; promote environmentally responsible, cost effective, healthier places to live and work; and reduce energy and water consumption. Like the Energy Efficiency Standards, 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.

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

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4 California Environmental Protection Agency, Air Resource Board, “EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars," January 24, 2011, Available: http://www.arb.ca.gov/newsrel/newsrelease.php?id=181, accessed November 19, 2015.

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 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.[5]

4.13.2.3.3 Local Regulations and Directives

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.[6] Additionally, LADWP will be increasing its renewable portfolio from 20 percent to 50 percent of its total provided power by 2030.

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).[7] 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

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5 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.

6 Los Angeles Department of Water and Power, *2015 Power Integrated Resource Plan*, December 2015, Available: http://www.ladwp.com/powerIRP.

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

implement the Sustainability Performance Improvement Management System (discussed below); 2) develop and implement policies to meet the U.S. Green Building Council's Leadership in Energy and Environmental Design (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.[8]

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).[9] 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

In July 2007, Mayor Antonio Villaraigosa issued Executive Directive No. 10 regarding environmental stewardship practices. 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.[10]

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 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. Key measures in the LAGBC related to GHG emissions that apply to nonresidential buildings include, but are not limited to the following:

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

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

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

- 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 2015, the Mayor of Los Angeles released Sustainable City pLAn as a policy roadmap for achieving the City's goals related to the environment, the economy, and social equity.[11] In April 2016, the Mayor's office released a report documenting progress by City Departments in implementing the Sustainable City pLAn.[12] LAWA contributed to the development of the pLAn and has taken steps to implement the applicable actions called for in the pLAn.

LAWA Sustainability Plan and Sustainable Airport Planning, Design and Construction Guidelines

LAWA's Sustainability Plan,[13] 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.

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11 City of Los Angeles, *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.

12 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.

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

LAWA has also developed *Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects* (LAWA Guidelines).[14] 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.

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 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.

4.13.2.4 Existing Conditions

4.13.2.4.1 Electricity

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. The LADWP service area used approximately 23,800,000 megawatt-hours (MWh) of electricity in 2015. LADWP obtains electricity from various generating sources that utilize coal,

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[14] 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.

nuclear, natural gas, hydroelectric, and renewable resources to generate power. Its current system capacity is 7,630 megawatts (MW). The highest peak demand event occurred in 2014 at 6,396 MW. Projected future electricity consumption growth for LADWP is less than one percent per year through 2035. Projections prepared by LADWP indicate that the power demand for Los Angeles will be approximately 25,400,000 MWh in 2025 and 29,500,000 MWh in 2035. 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. In 2014, LADWP secured 20 percent of its power from renewable resources. 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.[15]

LADWP supplies electrical power to the Project area primarily through Receiving Station "N" (RS-N), which is located on the north side of West Florence Avenue at Isis Avenue, approximately one-half mile north of the Project site. Two 138 kilovolt (kV) subterranean transmission lines along Aviation Boulevard connect RS-N with the Scattergood Generating Station in Playa del Rey. Overhead and underground distribution lines run along rights-of-way throughout the area from RS-N to distribution points, including Distribution Station 111 (DS-111), located on the east side of Vicksburg Street between W. 96th and W. 98th Streets. DS-111 provides secondary power to the Project area through high-voltage feeder cables within conduit banks underneath rights-of-way.

In the future, LAWA may construct an additional network station near the corner of Westchester Parkway and Pershing Avenue. The network station would primarily serve to provide redundancy in the case of power outages and increase the reliability of electrical service at the Airport. LADWP constructed vaults for this potential station when they installed an electrical line along Westchester Parkway in early 2016.

Baseline Electricity Consumption

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.[16] 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

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15 Los Angeles Department of Water and Power, *2015 Power Integrated Resource Plan,* December 2015, Available: http://www.ladwp.com/powerIRP.

16 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.

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.[17]

4.13.2.4.2 Natural Gas

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. In 2015, approximately 2,559 million cubic feet (MMcf) of natural gas per day (934,035 MMcf annually) was consumed in Southern California.[18] 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. SoCalGas obtains the majority of its natural gas from out-of-state sources.[19] Estimated total SoCalGas natural gas supply for both the years 2025 and 2035 is 3,875 MMcf/day (1,414,375 MMcf annually). Estimated total SoCalGas natural gas requirements to meet demand for the years 2025 and 2035 is 2,456 MMcf/day (896,440 MMcf annually) and 2,382 MMcf/day (869,430 MMcf annually), respectively. As such, future supplies of natural gas would likely be adequate to meet projected demand within the SoCalGas service area through 2035.[20]

Within the Project area, high-pressure distribution lines are located within street rights-of-way, specifically Century Boulevard, W. 98th Street, and Aviation Boulevard. Minor laterals connect these lines to points of service. Two 30-inch gas transmission lines run beneath the right-of-way of Aviation Boulevard from south of the Project area to W. 98th Street, then along the rail line right-of-way to Arbor Vitae Street. One transmission line turns west along Arbor Vitae Street, then north along Airport Boulevard. The other transmission line continues north along Portal Avenue.[21]

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17 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.

18 The California Gas and Electric Utilities, *2016 California Gas Report*, 2016, Available: https://www.socalgas.com/regulatory/cgr.shtml.

19 The California Gas and Electric Utilities, *2016 California Gas Report*, 2016, Available: https://www.socalgas.com/regulatory/cgr.shtml.

20 The California Gas and Electric Utilities, *2016 California Gas Report*, 2016, Available: https://www.socalgas.com/regulatory/cgr.shtml.

21 Southern California Gas Company, Gas Transmission and High Pressure Distribution Pipeline Interactive Map – LA, Available: http://www.socalgas.com/safety/pipeline-maps/LA.shtml, and meetings between LAWA and SoCalGas staff, March 11 and March 23, 2016.

Baseline Natural Gas Consumption

Natural gas is primarily used at LAX for electricity generation, space heating, food preparation, and maintenance activities. Baseline (2015) natural gas consumption at LAX is approximately 3,067,196 therms (306.6 MMcf) per year.[22] 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. LAX's natural gas consumption is approximately 0.03 percent of the total Southern California regional demand.

4.13.2.4.3 Transportation-Related Fuels

LAX utilizes other fuel systems, including Jet A fuel for aircraft and gasoline, diesel, and alternative fuels for automobiles, trucks, shuttle buses, support vehicles, and other ground-support equipment. In addition, passenger vehicle trips associated with the airport require fuel, mainly gasoline and diesel. Fuels used for ground transportation vehicles are delivered, stored and consumed in a distributed manner, as ground transportations functions are performed by a range of airport and non-airport vehicles including shuttle buses associated with hotels, car rental operators, and parking facilities; taxis; and private vehicles.

4.13.2.5 Thresholds of Significance

A significant energy use impact would occur if the proposed Project would:

- Exceed energy supply and distribution capabilities due to project-related demand
- Require new (off-site) supply facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, that could cause significant environmental impacts
- Substantially interfere with major utility facilities that could result in significant direct or indirect impacts on the environment not already addressed as part of the project

These thresholds are largely based on guidance provided in the *L.A. CEQA Thresholds Guide*.[23]

4.13.2.6 Impact Analysis

4.13.2.6.1 LAX Landside Access Modernization Program Project

The following discussion applies to both Phase 1 and Phase 2 of the proposed Project.

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22 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.

23 City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Construction

Energy Supply and Distribution Capabilities

Construction of the proposed Project would consume energy in the form of electricity, natural gas and transportation-related fuels, through use of construction equipment, transport of construction materials, temporary lighting, etc. Between July 2015 and June 2016, the production of gasoline in Southern California averaged approximately 135 million gallons to 180 million gallons per week; and the production of diesel within the entire State of California averaged from approximately 100 million gallons to 115 million gallons per week.[24] The estimated consumption of gasoline and diesel during construction of the proposed Project would be approximately 7,700 gallons and 40,000 gallons during a peak week, respectively. This represents 0.006 percent of the average weekly production of gasoline in Southern California and 0.04 percent of the average weekly production of diesel in the State of California. Construction energy consumption is short-term and relatively minor compared to long-term regional energy use. As such, impacts on fuel supply would be less than significant.

Supply Facilities and Distribution Infrastructure

Energy requirements for construction of the proposed Project represent a small fraction (0.006 percent of the average weekly production of gasoline in Southern California and 0.04 percent of the average weekly production of diesel in the State of California) of the existing capacity of the electrical and fuel systems. The energy demand for construction would not require new facilities, infrastructure, or capacity-enhancing alterations. Impacts would be less than significant.

Interference with Major Utility Facilities

Construction of the proposed Project would generally require relocation of utility infrastructure throughout the Project area. For example, utility lines located along roadways intended to be widened would be shifted to match new curbs, if impacted; however, most utility lines in the area currently run under the existing street and would not be affected. New hydrants and utility services would be installed along new roadways. As part of construction permitting, precise locations of existing and future utility features within the road rights-of-way would be identified in coordination with the City of Los Angeles Bureau of Engineering. In addition, utility lines within Manchester Square and Belford would be abandoned and removed. For the most part, such relocation would be incidental to roadway widening and site preparation, the construction impacts of which are analyzed in relevant sections of this EIR. However, the following substantial utility infrastructure components would require relocation or protection due to Project construction.

The proposed APM guideway would span Aviation Boulevard; run along the north side of the W. 96th Street right-of-way; and span W. 96th Street, W. 98th Street, Century Boulevard, and Sepulveda Boulevard. The APM guideway would be elevated on support columns that would be 8 feet in diameter and embedded up to approximately 100 feet deep. The columns would be spaced approximately every 100 feet. **Table 4.13.2-1** identifies the electrical and gas utility components that would be affected during construction, and indicates

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[24] California Energy Commission, "Petroleum Watch," August 17, 2016.

whether they would need to be relocated or protected in place, whereby the utility components would be shielded from physical or vibration impacts through design measures.

Table 4.13.2-1: Potentially Affected Electrical and Gas Utilities

PROJECT COMPONENT	UTILITY TYPE	LOCATION	SIZE (INCH)	ACTION
P2A Parking Garage	Electrical (UG)	CTA		Relocate
P2A Parking Garage	Natural Gas	CTA		Relocate
P2B Parking Garage	Electrical (UG)	CTA		Relocate
P5 Parking Garage	Electrical (UG)	CTA		Relocate
APM Guideway	Natural Gas (2)	Sepulveda Blvd	6" & 4"	Protect
APM Guideway	Fuel	Sepulveda Blvd		Protect
APM Guideway	Natural Gas (Multiple)	Century Blvd		Protect
APM Guideway	Electrical (OH)	Vicksburg Ave & Avion Dr		Relocate
ITF West Garage	Gas	ITF West		Relocate
ITF West Garage	Electrical (UG)	ITF West		Relocate
APM MSF	Natural Gas (Multiple)	Belford Square		Relocate
APM Guideway/MSF	Natural Gas	96th St		Relocate
APM MSF	Electrical (OH)	Belford Square		Relocate
APM Guideway	Electrical (OH)	New "D" St		Relocate
APM Guideway	Electrical (OH)	96th St		Relocate
APM MSF	Electrical (UG)	Belford Square		Relocate
APM Guideway	Natural Gas (2)	Metro Crenshaw	30"	Relocate
APM Guideway	Natural Gas	Metro Crenshaw	10"	Relocate
APM Guideway	Natural Gas	Metro Crenshaw	6"	Relocate
Intersection/Roadway Improvements	Natural Gas (2)	98th St & Aviation Blvd	30"	Relocate
Intersection/Roadway Improvements	Natural Gas	98th St & Aviation Blvd	10"	Relocate
Intersection/Roadway Improvements	Natural Gas	98th St & Aviation Blvd	6"	Relocate
APM Guideway	Electrical (OH)	Metro Crenshaw		Relocate
Intersection/Roadway Improvements	Electrical (UG) - (2) 138 kv electrical duct bank	98th St & Aviation Blvd		Relocate
Roadway Improvements	Electrical (OH)	Aviation Blvd		Relocate
Roadway Improvements	Electrical (UG)	Aviation Blvd		Relocate
ITF East & CONRAC	Natural Gas (Multiple)	Manchester Square		Relocate
ITF East & CONRAC	Electrical (UG) (Multiple)	Manchester Square		Relocate

NOTES:

APM = Automated People Mover System
MSF = Maintenance and Storage Facility
CTA = Central Terminal Area
OH = Overhead Transmission Lines
ITF = Intermodal Transportation Facility

SOURCE: MapLAX on behalf of Los Angeles World Airports; *Landside Access Modernization Program at Los Angeles International Airport, Draft Existing Utilities Identification & Potential Key Conflicts Technical Memorandum DA4860 Phase IIIA, Task 11.4*, September 1, 2015.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

As part of the roadway redesign, Vicksburg Avenue between W. 98th and W. 96th Streets has been proposed to be removed and replaced with an Airport access road system (Phase 2). This would remove the existing access to DS-111, a facility critical to LADWP's provision of electrical power to the Airport. As LAWA owns the property surrounding DS-111, alternative access would be provided by LAWA at the time of the roadway removal. The normal functionality of DS-111 would not be affected by the change in access.

To make W. 98th Street a through street from La Cienega Boulevard to Bellanca Avenue, W. 98th Street would have to pass under the elevated Metro Crenshaw/LAX line currently being constructed on the west side of Aviation Boulevard. To ensure sufficient clearance, W. 98th Street would have to be depressed as it passes under the Metro Crenshaw/LAX line. The intersection of W. 98th Street and Aviation Boulevard would also be depressed so that the two roadways would meet in a safely designed intersection. A large amount of utility infrastructure exists within the Aviation Boulevard right-of-way. This includes LADWP 138kV transmission lines and associated electrical vaults; two SoCalGas 30-inch gas pipelines; and Level 3 Communications fiber-optic cable conduits. The lowering of the road surface would require that these lines be lowered or re-routed to maintain separation standards from the roadway and between the different lines. The lowering or rerouting of these lines would be implemented by the utility owner. The size and critical nature of these facilities would be taken into account in the Project design plans and the construction specifications and timelines.

In summary, there is extensive energy utilities infrastructure at and around the Project site, which is typical for highly urbanized areas such as Los Angeles, and construction of the proposed Project components would affect such infrastructure. As evidenced by Table 4.13.2-1 above, preliminary information has been compiled relative to the nature, location, and extent to which the proposed Project would interface with existing electricity and natural gas utilities. That information along with additional data that may be generated in the course of further coordination with affected utility agencies/companies, which occurs in the normal course of construction planning and permitting, would be incorporated into detailed plans and construction specifications for the proposed Project, which would serve to avoid or minimize potential conflicts with utilities. It should also be noted that, in conjunction with the initiation of construction activities involving subsurface excavation, the exact locations of utility lines would be confirmed through the City of Los Angeles Bureau of Engineering permit office or through pre-excavation utilities surveys, as is standard for roadwork in the City. This would further serve to avoid or minimize potential conflicts with utilities during construction. The modifications to existing utilities necessary to accommodate the proposed Project improvements would occur within the context of constructing the various components of the proposed Project, and the environmental impacts associated with constructing each component, such as air pollutant emissions from construction equipment and activities, construction-related noise, and construction traffic, would include those related to utilities improvements. Based on the above, implementation of the proposed Project would not substantially interfere with major electricity or natural gas utility facilities that would result in significant direct or indirect impacts not already addressed in each Section of Chapter 4 as part of the proposed Project.

Operation

Energy Supply and Distribution Capabilities

Electrical

The proposed Project components would utilize electrical energy for a wide range of functions. As shown in **Table 4.13.2-2**, the daily power consumption of the proposed Project is estimated to be approximately 232,000 kWh per day or approximately 84,680 MWh per year. LADWP Power System, Systems Development staff indicated that existing power generation and distribution capacity is sufficient for the proposed Project. At the time of Project buildout, LADWP has forecasted peak demand to be less than 7,000 MW with a current capacity of 7,640MW[25]. This represents approximately 0.3 percent of the 29,500,000 MWh electrical demand LADWP forecasts for the LA region in 2035. Thus, project-related electricity demand would not exceed electrical supply and distribution capabilities and impacts would be less than significant.

Table 4.13.2-2: Estimated Electrical Usage: Project Components

COMPONENT	DAILY USAGE (KWH)
APM Propulsion and Control Systems	77,651
CTA APM Stations and Parking Garages	11,328
ITF West, including APM Station	12,269
ITF East, including APM Station	9,946
CONRAC, including APM Station	117,543
APM Maintenance and Storage Facility	3,264
Total	**232,000**
Annual Usage (MWH)	**84,680**

SOURCE: MapLAX, July 2016.
PREPARED BY: Meridian Consultants., July 2016.

As stated in Chapter 2, *Description of the Proposed Project*, the goals of the proposed Project include building new efficient transportation facilities that conserve energy, water, and other resources and reducing traffic congestion and vehicle miles traveled (VMT). The components of the proposed Project would be required to meet the energy efficiency and conservation requirements of the LAGBC. Specifically, the proposed Project would incorporate energy saving design elements such as natural daylighting and naturally ventilated and unconditioned spaces; on-site solar electricity generation where consistent with Federal Aviation Administration (FAA) guidance on glare and the obligation of airport sponsors to avoid creation of aviation hazards; and elevator regenerative drive systems and automatic power down when idle. As such, inefficient and unnecessary consumption of electricity would be minimized. Thus, the impact of the proposed Project on electrical supply facilities and distribution infrastructure would be less than significant.

25 Los Angeles Department of Water and Power, *2015 Power Integrated Resource Plan, Appendix A, Load Forecasting*, December 2015.

Natural Gas

Project-related natural gas consumption would result from heating and cooking uses. No new gas connections to serve the proposed Project elements would be required except at the APM Maintenance and Storage Facility (MSF). Natural gas would be used at the APM MSF to serve the pressure wash system, and for space and water heating. Annual usage is estimated at 129 MMcf or approximately 0.4 MMcf/day. Given that SoCalGas estimates natural gas supply in Southern California would be 3,875 MMcf/day (1,414,375 MMcf annually) in 2035, this represents a very small portion (0.01 percent) of the estimated available natural gas supply. The Intermodal Transportation Facilities (ITFs) and the Consolidated Rental Car Facility (CONRAC) are not expected to utilize natural gas. Given the limited use of natural gas for the proposed Project, the proposed Project would have a less than significant impact on natural gas supply and distribution capabilities, as well as on supply facilities and distribution infrastructure.

Transportation-Related Fuels

The vehicle fleet in southern California has continued to evolve toward more efficient energy usage. The CONRAC and the ITFs would feature electric vehicle charging stations to facilitate growing usage of electric vehicles. The proposed Project is intended to reduce car and shuttle trips within the Airport and alleviate congestion in the Project area. Overall VMT would decrease as a result of the proposed Project (excluding potential future related development), as discussed in Section 4.5, *Greenhouse Gas Emissions*. As such, the proposed Project would not result in an increase in transportation energy consumption as compared to Future without Project conditions. By reducing the need for rental car shuttles and by moving much of the current vehicle traffic within the Central Terminal Area (CTA) to the ITFs, the proposed Project would reduce the use of transportation-related fuels.

As part of the proposed Project, LAWA will adopt new LAX Design Guidelines (see **Appendix B**) that include a list of measures to be incorporated into the design, construction, and operations of the proposed Project facilities. LAWA has based its LAX Design Guidelines on the mandatory and voluntary tiers defined in the LAGBC. In addition to the mandatory measures required for LAGBC Tier 1 compliance, additional measures related to energy have been identified for implementation at the CONRAC, ITFs, and APM MSF. These measures, which are part of the proposed Project and would further reduce energy consumption, are shown in **Table 4.13.2-3**. .

[Draft]

Table 4.13.2-3 (1 of 2): Energy Conservation Sustainability Initiatives

	LOCATION		
INITIATIVE DESCRIPTION	**CONRAC**	**ITFs**	**APM MAINTENANCE AND STORAGE FACILITY**
Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings as well as additions and alterations are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2.	If Feasible	Mandatory	If Feasible
Newly installed outdoor lighting power is no greater than 90% of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	Mandatory	Mandatory	Mandatory
For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 90% of the Title 24, Part 6 Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 85% of the Title 24, Part 6 Energy Budget for the Proposed Design Building.	Mandatory	Mandatory	Mandatory
Use on-site renewable energy for at least 1% of the electrical service overcurrent protection device rating calculated in accordance with the 2013 Los Angeles Electrical Code or 1KW, whichever is greater, in addition to the electrical demand required to meet 1% of natural gas and propane use calculated in accordance with the 2013 Los Angeles Plumbing Code. Calculate renewable on-site system to meet the requirements of Section A5.211.1. Factor in net-metering, if offered by local utility, on an annual basis. Participate in the local utility's renewable energy portfolio program that provides a minimum of 50% electrical power from renewable sources. Maintain documentation through utility billings.	If Feasible	Mandatory	If Feasible
Space for future electrical solar system installation. Comply with Section 110.10 of the California Energy Code.	Mandatory	Mandatory	Mandatory
Prewiring for future electrical solar system. Install conduit from the building roof, eave, or other locations approved by the Department to the electrical service	Mandatory	Mandatory	Mandatory
In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows: Document systems operation and controls in the project specifications and commissioning plan. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion.	Mandatory	Mandatory	Mandatory

Table 4.13.2-3 (2 of 2): Energy Conservation Sustainability Initiatives

	LOCATION		
INITIATIVE DESCRIPTION	**CONRAC**	**ITFS**	**APM MAINTENANCE FACILITY**
A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use.	Mandatory	Mandatory	If Feasible
An escalator shall have a VVVF motor drive system that is fully regenerative when the escalator is in motion.	Mandatory	Mandatory	If Feasible

NOTES:

CONRAC = Consolidated Rental Car Facility

ITF = Intermodal Transportation Facility

N/A = Not Applicable

SOURCE: City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

Supply Facilities and Distribution Infrastructure

As discussed in Section 2.4.1.2.4 of Chapter 2, *Description of the Proposed Project*, the proposed Project would include the construction of three traction power substations (TPSSs) to provide power to the APM guideway and trains. A fourth TPSS may be required depending on type of technology used for the operating system. The precise design of the TPSSs would be coordinated with LADWP. The TPSSs would be approximately 3,000 sq. ft. in size with additional support equipment located adjacent to each building. Typical equipment housed in and around the substations include transformers, rectifiers, cabling, and switchgear. Additionally, each TPSS would have controlled access, security fencing, and various landscaping elements. In addition to the TPSSs, the proposed Project would include LADWP electrical industrial stations to supply power (connected load) at the APM MSF and the CONRAC.

LADWP is currently upgrading the Scattergood Generating station and developing new solar, wind and geothermal facilities. While these projects will improve capacity and reliability that would benefit LAX, these capital projects were pre-existing and not as a result of the proposed Project.

The CONRAC facility would require on-site fueling facilities to service the various rental car companies. The estimated daily fuel requirements of the CONRAC would be approximately 30,000 gallons per day. Fuel would be delivered by truck in a manner similar to delivery of fuel to existing rental car sites and gas stations in the Project area. Fuel would be stored on-site in underground fuel storage tanks (USTs) and would be dispensed through standard fleet gasoline dispensing equipment. These fueling activities currently occur at rental car facilities in the Project area. The fueling of rental cars represents energy consumption that would occur with or without the proposed Project. Thus, the proposed Project would have a less than significant impact on fuel supply and distribution capabilities.

Based on the above, the Project would not require new supply facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, that could cause significant environmental impacts. Impacts would be less than significant.

Interference with Major Utility Facilities

Once completed, the proposed Project would not interfere with major utility facilities that could result in significant direct or indirect impacts on the environment. Impacts would be less than significant.

4.13.2.6.2 LAX Landside Access Modernization Program Potential Future Related Development

Construction

Energy Supply and Distribution Capabilities

Construction of the potential future related development would consume energy in the form of electricity, natural gas and transportation-related fuels, through use of construction equipment, transport of construction materials, temporary lighting, etc. Between July 2015 and June 2016, the production of gasoline in Southern California averaged approximately 135 million gallons to 180 million gallons per week; and the production of diesel within the entire State of California averaged from approximately 100 million gallons to 115 million gallons per week.[26] The estimated consumption of gasoline and diesel during construction of the potential future related development is approximately 2,400 gallons and 19,000 gallons during a peak week, respectively. This represents 0.002 percent of the average weekly production of gasoline in Southern California and 0.02 percent of the average weekly production of diesel in the State of California. Construction energy consumption is short-term and relatively minor compared to long-term regional energy use. As such, impacts on fuel supply would be less than significant.

Supply Facilities and Distribution Infrastructure

Energy requirements for construction of the potential future related development represent a small fraction of the existing capacity of the electrical and fuel systems. The energy demand for construction would not require new facilities, infrastructure, or capacity-enhancing alterations. Impacts would be less than significant.

Interference with Major Utility Facilities

As described above, construction of the proposed Project would resolve conflicts with existing utility facilities in the Project area. Therefore, the future development of the Airport Landside Support Subarea, as described in the proposed amendment to the LAX Specific Plan (see Section 2.8.2), is not expected to interfere with major utility facilities. LAWA has no specific plans for development of these parcels at this time. At such time as specific development plans are proposed, they would be evaluated in more detail. Impacts would be less than significant.

[26] California Energy Commission, "Petroleum Watch," August 17, 2016.

Operation

Energy Supply and Distribution Capabilities

The future development of the Airport Landside Support Subarea, as described in the proposed amendment to the LAX Specific Plan, would generate new energy demands. The uses projected for these sites include office space, hotel, retail space, and conference center. LAWA has no specific plans for development of these parcels at this time. At such time as specific development plans are proposed, they would be evaluated in more detail.

However, for the purposes of this EIR, an assumption has been made as to the size and general uses that could be accommodated in these areas. As shown in **Table 4.13.2-4**, electrical energy consumption has been estimated for this future development. When combined with the estimated power demand of the potential future related development, demand is still within LADWP's excess capacity. This estimate is conservative as the factors used represent historical usage data by existing buildings and do not reflect new development subject to current and future energy efficiency standards. Any proposed development would comply with the LAGBC and the LAX Design Guidelines to be adopted as part of the proposed Project, which would reduce energy use below the estimated amount. Impacts would be less than significant.

Supply Facilities and Distribution Infrastructure

The future development of the Airport Landside Support Subarea, as described in the proposed amendment to the LAX Specific Plan, would generate new energy demands. The uses projected for these sites include office space, hotel, retail space, and conference center. Based on discussion with LADWP, no new supply facilities and distribution infrastructure, or capacity-enhancing alterations are foreseen as a result of the potential development of these sites. LAWA has no specific plans for development of these parcels at this time. At such time as specific development plans are proposed, they would be evaluated in more detail. Impacts would be less than significant.

Table 4.13.2-4: Estimated Electrical Usage: Future Related Development

USE	SQUARE FEET	USAGE FACTOR KWH/YEAR	USAGE (MWH/YEAR)
Office	300,000	12.95	3.885
Hotel	300,000	9.95	2.985
Commercial	200,000	13..55	2.710
Conference Center	100,000	10.5	1.050
Total	**900,000**		**10.630**

SOURCE: Usage Factors Derived from the 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.

PREPARED BY: Meridian Consultants, August 2016.

Interference with Major Utility Facilities

As described above, construction of the proposed Project would resolve conflicts with existing utility facilities in the Project area. Therefore, the future development of the Airport Landside Support Subarea, as described in the proposed amendment to the LAX Specific Plan, is not expected to interfere with major utility facilities. LAWA has no specific plans for development of these parcels at this time. At such time as specific development plans are proposed, they would be evaluated in more detail. Impacts would be less than significant.

4.13.2.7 Cumulative Impacts

As identified in Chapter 3, *Overview of Project Setting*, other ongoing and future projects have been identified within the Project area. These projects are related to accommodating the projected growth in LAX passengers. However, cumulative energy demand is impacted by regional growth. LADWP has forecasted future utility demand in the Power IRP and concluded that excess capacity exists over the planning horizon through 2040. 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 would be less than significant. In addition, 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*. Finally, as the proposed Project would reduce VMT and thus, consumption of transportation-related fuels, it would not have a cumulative impact on transportation-related fuels. As such, cumulative development projects would not result in a wasteful, inefficient, or unnecessary consumption of electricity, natural gas, or transportation-related fuels.

4.13.2.8 Mitigation Measures

As indicated in Section 4.13.2.6, impacts related to energy use would be less than significant; therefore, no mitigation measures are required.

4.13.2.9 Level of Significance after Mitigation

Impacts related to energy use from implementation of the proposed Project and potential future related development would be less than significant.

4.13.2.10 Other Measures

As indicated in Section 4.13.2.6, impacts related to energy use would be less than significant; therefore, no mitigation measures are required to reduce impacts. However, LAWA implements Standard Control Measures to reduce construction emissions which also results in less energy usage. Standard Control Measure LAX-AQ-1, Construction-Related Air Quality Control Measures, included in Section 4.2.1, *Air Quality*, would be implemented to reduce energy usage during construction.

4.13.3 WATER AND WASTEWATER

4.13.3.1 Introduction

The water analysis addresses water consumption associated with the proposed Project as well as sanitary wastewater generated by the proposed Project. Water quality is addressed in Section 4.7, *Hydrology, Water Quality, and Groundwater*.

4.13.3.2 Methodology

An estimate of the water and wastewater demands of the proposed Project was prepared by LAWA, and coordinated with the LADWP to determine whether existing water supply and infrastructure would be sufficient to service the demand required by the proposed Project. Existing water and wastewater infrastructure facilities in the Project area were identified to evaluate the potential for construction of proposed Project facilities to conflict with this existing infrastructure. Information from a Water Supply Assessment (WSA) prepared by LADWP (**Appendix Q**) for the proposed Project was also used in this section to identify whether water demand associated with the proposed Project could be met by LADWP. This analysis also considers the ability of the proposed Project to avoid or reduce water consumption through conservation programs and efficiency features.

4.13.3.3 Regulatory Framework

4.13.3.3.1 California Green Buildings Standards Code

Adopted in 2010, and updated annually, the California Green Building Standards Code (CALGreen) is found in Part 11, Title 24 of the CCR. The purpose of CALGreen is to cause a reduction in GHG emissions; promote environmentally responsible, cost effective, healthier places to live and work; and reduce energy and water consumption. CALGreen identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings. Relative to water usage, CalGreen contains specific requirements for plumbing fixtures and general requirements regarding indoor and outdoor water usage.

4.13.3.3.2 Urban Water Management Planning Act

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 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[27] 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[28], and Sustainable City pLAn[29], which promotes investment in conservation, recycling, and local source development, and calls for a 25 percent reduction in per capita water use by 2035.[30] The UWMP discusses conservation strategies to help achieve this goal.

4.13.3.3.3 Senate Bill 610

Senate Bill (SB) 610, Sections 10910–10915 of the State Water Code, requires a lead agency to request a WSA from the local water supplier prior to approval of projects that are subject to CEQA and meet the following criteria:

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment of more than 500,000 square feet of floor space or employing more than 1,000 persons;
- a proposed commercial office building of more than 250,000 square feet of floor space or employing more than 1,000 persons;
- a proposed hotel or motel of more than 500 rooms;
- a proposed industrial, manufacturing, or processing plant or industrial park of more than 40 acres of land, more than 650,000 square feet of floor area, or employing more than 1,000 persons;
- a mixed-use project that falls in one or more of the above-identified categories; or
- a project not falling in one of the above-identified categories but that would demand water equal to or greater than the amount required by a 500-dwelling unit project.

A WSA is intended to indicate that the supplier has existing or planned water supplies adequate to meet the demands of the proposed project, and shall be incorporated into the Draft EIR for the project. LADWP prepared and adopted a WSA for the proposed Project (see Appendix Q).

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27 Los Angeles Department of Water and Power, *Urban Water Management Plan 2015*, June 7, 2016.

28 City of Los Angeles, Office of the Mayor, *Executive Directive No. 5, Emergency Drought Response – Creating a Water Wise City*, October 14, 2014.

29 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.

30 Los Angeles Department of Water and Power, *Urban Water Management Plan 2015*, June 7, 2016.

4.13.3.3.4 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act, passed in 2014 provides local agencies with the authority to adopt groundwater management plans. The Act requires the formation of local groundwater sustainability agencies that would develop and implement plans to achieve long term groundwater sustainability.

The Water Replenishment District (WRD) of Southern California was created with authority for the West Coast Groundwater Basin, which underlies approximately 160 square miles of coastal Los Angeles County including the Project area. Recently the WRD developed a Draft Groundwater Basins Master Plan (GBMP) for which an EIR was published in December 2015. Once that EIR has been certified by the WRD Board of Directors, the GBMP will be finalized and adopted by WRD.

The LADWP also owns groundwater rights in the San Fernando, Sylmar, and Eagle Rock basins for which the Upper Los Angeles River Area Watermaster is the groundwater sustainability agency. Water quality constraints have limited the usage of groundwater, although LADWP is engaged in management efforts to improve future availability. [31]

4.13.3.3.5 Integrated Resources Plan

The federal Clean Water Act requires the City to adopt a wastewater facilities plan in accordance with USEPA Rules and Regulations, 40 CFR, Section 35.917[32]. In addition, the Statewide General Waste Discharge Requirements (WDRs) for publicly-owned sanitary sewer systems requires the City to develop and implement a Sewer System Management Plan (SSMP). In 2006, the City adopted the Integrated Resources Plan (IRP). The IRP includes a Wastewater Facilities Plan that addresses system demand and capacity through 2020.[33] A review conducted in 2012 found that actual wastewater flows were lower than had been projected in the IRP.[34] This reduction has been attributed to water conservation, the economic downturn, rate changes, and infrastructure improvements. Updated projections show a continued decline in wastewater flows through 2020, the planning horizon for the current IRP. Preparation of the subsequent IRP, the 2040 One Water LA Plan, is underway.[35]

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31 Los Angeles Department of Water and Power, *Urban Water Management Plan 2015,* June 7, 2016.

32 40 Code of Federal Regulations, Section 35.917, Facilities Planning.

33 City of Los Angeles, Department of Public Works, Bureau of Sanitation and Department of Water and Power, *City of Los Angeles Integrated Resources Plan Executive Summary,* December 2006.

34 City of Los Angeles, Department of Public Works, Bureau of Sanitation and Department of Water and Power, *Water IRP 5-Year Review FINAL Documents,* June 2012.

35 City of Los Angeles, "One Water LA," Available: https://www.lacitysan.org/san/faces/home/portal/s-lsh-es/s-lsh-es-owla?_adf.ctrl-state=6nrce21mm_4&_afrLoop=26532090911900656#!, accessed March 29, 2016.

4.13.3.3.6 Los Angeles Municipal Code

The LAMC includes several ordinances to reduce water consumption. Ordinance No. 172,075 (Chapter XII, Article II, of the LAMC), adopted in 1998[36], requires all building owners to install low-flow showerheads (with a maximum flow of 2.5 gallons per minute (gpm)), 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. City Ordinance No. 163,532 (Chapter XII, Article IV, of the LAMC)[37] requires a 10 percent reduction in irrigation for turf areas three acres or greater. Further, the City has recently begun enforcement of prohibited water uses as defined in the City's Emergency Water Conservation Plan Ordinance (Chapter XIII, Article 1, of the LAMC).[38]

The City adopted the Water Efficiency Requirements Ordinance (Ordinance No. 180,822) in 2009[39] and the Green Building Ordinance (Ordinance No. 182,849) in 2013[40], which established more stringent requirements for water conservation. On June 6, 2016, the City adopted Ordinance No. 184,248,[41] which establishes citywide water efficiency standards and requires water-saving systems and technologies in buildings and landscapes.

4.13.3.3.7 LAWA Sustainability Plan and Sustainable Airport Planning, Design and Construction Guidelines

LAWA's Sustainability Plan,[42] developed in April 2008, describes LAWA's current sustainability practices and sets goals and actions that LAWA will undertake to implement the initiatives described in the LAGBC. The Sustainability Plan presents initiatives for the fiscal year 2008-2009 and long-term objectives and targets to meet fundamental objectives.

LAWA has also developed *Sustainable Airport Planning, Design and Construction Guidelines for Implementation on All Airport Projects* (LAWA Guidelines).[43] 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.

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[36] City of Los Angeles, Ordinance No. 172,075, Chapter XII, Article II, 1998.

[37] City of Los Angeles, Ordinance No. 163,532, Chapter XII, Article IV, Section 124.03, 1988.

[38] City of Los Angeles, Ordinance No. 184,250, Chapter XIII, Article I, Emergency Water Conservation Plan of the City of Los Angeles, 2016.

[39] City of Los Angeles, Ordinance No. 180,822, Chapter XII, Article V, Water Efficiency Requirements, 2009.

[40] City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.

[41] City of Los Angeles, Ordinance No. 184,248, Chapter IX, Articles 4 and 9, Water Efficiency Standards, June 6, 2016.

[42] City of Los Angeles, Los Angeles World Airports, *Los Angeles World Airports Sustainability Plan*, April 2008.

[43] 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.

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 water consumption. Actions that LAWA has been undertaking include use of low-flow water fixtures, use of reclaimed water, and use of drought tolerant plants.

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 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.

The LAX Design Guidelines include a section on sustainability initiatives to be considered for Airport projects that include water conservation measures (see Appendix B).

4.13.3.4 Existing Conditions

4.13.3.4.1 Water

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 1 percent from recycled water.[44]

LADWP obtains the majority of its water through purchases from the MWD, the largest water wholesaler in Southern California. The MWD has more than 5.0 million acre-feet (AF) of storage capacity available in reservoirs and banking/transfer programs, with approximately 2.37 million AF available; of that, approximately 626 thousand AF was in emergency storage as of January 1, 2014. As of June 30, 2013, LADWP has a

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[44] 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.

preferential right to purchase 20.22 percent of MWD's total water supply, although the City has set a target of reducing its reliance on MWD water by 50 percent by 2025.[45]

In the early 20th century, the LADWP constructed the LAA to import water from the eastern Sierra Nevada. Current capacity of the LAA is 775 cubic feet per second (cfs). Due to allocations for environmental purposes, local uses, and other losses, the City of Los Angeles uses approximately 39 percent of the available water from Owens Valley and Mono Basin. In addition, the available supply is highly dependent on snowfall in the eastern Sierra Nevada; therefore, water delivery from the LAA varies. The LADWP also owns groundwater rights in the San Fernando, Sylmar, Eagle Rock, Central, and West Coast Basins totaling approximately 107,408 AF/Y.[46] Water quality constraints have limited the usage of groundwater, although LADWP is engaged in management efforts to maintain future availability.

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.[47] 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.[48]

LADWP maintains a number of water lines throughout the area, mostly within street rights-of-way. The most substantial lines in the LAX area are 36-inch high pressure trunk lines along Century Boulevard and Sepulveda Boulevard.

LADWP also maintains reclaimed water lines that serve the LAX area. A 24-inch pipeline brings reclaimed water from the WBMWD north along Aviation Boulevard to Century Boulevard, west along Century Boulevard, north along Bellanca Avenue, west along 96th Street, and north along Jenny Avenue; the pipeline then continues west along Westchester Parkway, out of the Project area.

4.13.3.4.2 Wastewater

The City of Los Angeles Bureau of Sanitation (LABS) provides wastewater conveyance and treatment for the Project site and the surrounding area. The LABS system is the largest wastewater collection system in the United States. It serves a population of more than 4 million within a 600-square-mile service area that includes Los Angeles and 29 contracting cities and agencies. The City's more than 6,700 miles of public

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45 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.

46 Los Angeles Department of Water and Power, *Urban Water Management Plan 2015,* June 7, 2016.

47 City of Los Angeles, Los Angeles Department of Water and Power, *LADWP Recycled Water Annual Report Fiscal Year 2014-15,* August 2015.

48 West Basin Municipal Water District, *Edward C. Little Water Recycling Facility Phase V Expansion Initial Study/Mitigated Negative Declaration,* March 2011.

sewers convey about 400 mgd of flow from residences and businesses to the City's four wastewater treatment and water reclamation plants.[49]

Wastewater within the Project area is collected by local sewer lines that generally run within rights-of-way and connect to primary sewers (36-inch or greater lines) along W. 96th and Vicksburg Streets. These primary lines feed into the Central Outfall Sewer, which passes underneath LAX and connects to the Hyperion Treatment Plant (HTP). The HTP, located southwest of LAX in Playa del Rey, provides treatment capacity for all wastewater flows generated within the Project area. In 1998, the HTP was upgraded to provide full secondary treatment for all influent based on an average dry weather flow of 450 mgd. The HTP currently processes average wastewater flows of approximately 275 mgd.[50] The LABS has indicated that there are no substantial planned projects or improvements within the Project area.[51]

4.13.3.5 Thresholds of Significance

A significant water supply or wastewater impact would occur if the proposed Project would:

- Exceed regional water supply due to project-related water demand
- Require new (off-site) water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, that could cause significant environmental impacts
- Substantially interfere with major water or wastewater facilities, resulting in significant direct or indirect impacts on the environment not already addressed as part of the project

These thresholds are largely based on guidance provided in the *L.A. CEQA Thresholds Guide*.[52]

4.13.3.6 Impact Analysis

4.13.3.6.1 LAX Landside Access Modernization Program Project

The following discussion applies to both Phase 1 and Phase 2 of the proposed Project.

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[49] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Sewers, Available: https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-s?_adf.ctrl-state=sss4mlm4a_4&_afrLoop=30183509399145286#!, accessed March 29, 2016.

[50] City of Los Angeles, Department of Public Works, Bureau of Sanitation, Hyperion Water Reclamation Plant, Available: https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-cw/s-lsh-wwd-cw-p/s-lsh-wwd-cw-p-hwrp?_adf.ctrl-state=sss4mlm4a_4&_afrLoop=30183617555210428#!, accessed March 29, 2016.

[51] Meeting between LAWA and the City of Los Angeles Bureau of Sanitation, December 10, 2015.

[52] City of Los Angeles, *L.A. CEQA Thresholds Guide, Your Resource for Preparing CEQA Analyses in Los Angeles*, 2006.

Construction

Water Supply

Implementation of the proposed Project would include water consumption for various construction-related purposes such as concrete production, equipment cleaning, certain activities such as pavement saw-cutting, and dust control. Contractors selected to construct the components of the proposed Project would be required to follow LAWA's *Sustainable Airport Planning, Design and Construction Guidelines*. These guidelines including construction techniques that reduce water consumption such as using non-potable water for dust control and equipment washing. Furthermore, as a preliminary step to construction some existing uses would be removed (see Section 2.5, *Enabling Projects,* in Chapter 2, *Description of the Proposed Project*). This would further offset water demand during construction. As discussed below, LADWP has indicated that water supply is available to meet the long-term demand of the proposed Project, which would be greater than construction water usage. As such, the construction-related water demand of the proposed Project would not exceed regional water supply. Impacts would be less than significant.

Supply Facilities and Distribution Infrastructure

As noted above, construction of the proposed Project would not exceed regional water supplies. The proposed Project is located in an urbanized portion of the City of Los Angeles that is well served by water and wastewater distribution infrastructure. Existing mains, trunk lines, and services lines provide service throughout the Project area. Other than new connections at the point of contact, no new distribution infrastructure would be required. As such, construction of the proposed Project would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, which could cause significant environmental impacts. Impacts would be less than significant.

Interference with Major Utility Facilities

Construction of the proposed Project would generally require relocation of utility infrastructure throughout the Project area. For example, utility lines located along roadways intended to be widened would be shifted to match new curbs, if impacted; however, most utility lines in the area currently run under the existing street and would not be affected. New hydrants and utility services would be installed along new roadways. As part of construction permitting, precise locations of existing and future utility features within the road rights-of-way would be identified in coordination with the City of Los Angeles Bureau of Engineering. In addition, utility lines within Manchester Square and Belford would be abandoned and removed. For the most part, such relocation would be incidental to roadway widening and site preparation, the construction impacts of which are analyzed in relevant sections of this EIR. However, the following substantial utility infrastructure components would require relocation or protection due to Project construction.

The proposed APM system would span Aviation Boulevard; run along the north side of the W. 96th Street right-of-way; and span W. 96th Street, W. 98th Street, Century Boulevard, and Sepulveda Boulevard. The APM would be elevated on support columns that would be 8 feet in diameter and embedded up to approximately 100 feet deep. The columns would be spaced approximately every 100 feet. **Table 4.13.3-1** identifies the water and sewer utilities that the proposed Project would potentially affect during construction, and indicates whether they would need to be relocated or protected in place, whereby the utility components would be shielded from physical or vibration impacts through design measures.

Table 4.13.3-1: Potentially Affected Water and Sewer Utilities

PROJECT COMPONENT	UTILITY TYPE	LOCATION	SIZE (IN)	ACTION
West CTA APM Station	Stormwater (Multiple)	CTA		Relocate
West CTA APM Station	Water	CTA		Relocate
West CTA APM Station & Center Way	CUP Utilities	CTA		Protect
Sewer	Sanitary Sewer	CTA		Protect
P2A Parking Garage	Water (Multiple)	CTA		Relocate
P2A Parking Garage	COS	CTA	57"	Protect
P2A Parking Garage	Sanitary Sewer (2)	CTA		Protect
P2A Parking Garage	Stormwater	CTA		Relocate
P2B Parking Garage	Water (Multiple)	CTA		Relocate
P2B Parking Garage	Stormwater (Multiple)	CTA		Relocate
P5 Parking Garage	Water (Multiple)	CTA		Relocate
P5 Parking Garage	Sanitary Sewer	CTA		Protect
APM Guideway	Water	Sepulveda Blvd	16"	Protect
APM Guideway	Stormwater	Sepulveda Blvd	44"x25"	Protect
APM Guideway	Water (Multiple)	Century/Delta Hangar		Relocate
APM Guideway	Sanitary Sewer (Force Main)	Century/Delta Hangar	42"	Protect
APM Guideway	Water	Century Blvd	36"	Protect
APM Guideway	Water	Century Blvd	12"	Protect
ITF West Garage	Reclaimed Water	ITF West	24"	Relocate
ITF West Roadway	Water	96th St	8"	Relocate
ITF West Garage	Water (Multiple)	ITF West		Relocate
ITF West Garage	Storm Drain (Multiple)	ITF West		Relocate
ITF West Garage	Sewer (Multiple)	ITF West		Relocate
APM MSF	Water (2)	Belford Square		Relocate
APM MSF	Sanitary Sewer	Belford Square	8"	Relocate
APM Guideway	Reclaimed Water	96th St		Relocate
Intersection/Roadway Improvements	Water	98th St & Aviation Blvd	12"	Relocate
APM Guideway	Stormwater	Bellanca Ave	87"	Protect
ITF East & CONRAC	Water (Multiple)	Manchester Square		Relocate
ITF East & CONRAC	Sanitary Sewer (Multiple)	Manchester Square		Relocate

NOTES: CONRAC = Consolidated Rental Car Facility; APM = Automated People Mover System; COS = Central Outfall Sewer

ITF = Intermodal Transportation Facility; CTA = Central Terminal Area

SOURCE: MapLAX on behalf of Los Angeles World Airports, *Landside Access Modernization Program at Los Angeles International Airport, Draft Existing Utilities Identification & Potential Key Conflicts Technical Memorandum DA4860 Phase IIIA, Task 11.4*, September 28, 2015.

PREPARED BY: Ricondo & Associates, Inc., July 2016.

In summary, there is extensive water and sewer infrastructure at and around the Project site, which is typical for highly urbanized areas such as Los Angeles, and construction of the proposed Project components would affect such infrastructure. As shown in Table 4.13.3-1, preliminary information has been compiled relative to the nature, location, and extent to which the proposed Project would interface with existing water and sewer utilities. That information along with additional data that may be generated in the course of further coordination with affected utility agencies/companies, which occurs in the normal course of construction planning and permitting, would be incorporated into detailed plans and construction specifications for the proposed Project, which would serve to avoid or minimize potential conflicts with utilities. It should also be noted that, in conjunction with the initiation of construction activities involving subsurface excavation, the exact locations of utility lines would be confirmed through the City of Los Angeles Bureau of Engineering permit office or through pre-excavation utilities surveys, as is standard for roadwork in the City. This would further serve to avoid or minimize potential conflicts with utilities during construction. The modifications to existing utilities necessary to accommodate the proposed Project improvements would occur within the context of constructing the various components of the proposed Project, and the environmental impacts associated with constructing each component, such as air pollutant emissions from construction equipment and activities, construction-related noise, and construction traffic, would include those related to utilities improvements. Based on the above, implementation of the proposed Project would not substantially interfere with major water and sewer utility facilities that would result in significant direct or indirect impacts not already addressed in each section of Chapter 4 as part of the proposed Project.

Operation

Water Supply

The proposed Project would generate a demand for water due to potable water use in restroom and food service facilities; car and train washing operations; fire water systems; and landscaping. LAWA requested that LADWP prepare a WSA for the proposed Project in accordance with the requirements of SB 610, which was completed and approved by the Board of Water and Power Commissioners on May 3, 2016 (see Appendix Q). LADWP estimated that the Project components would have a net increase in water demand of 171 AF/Y.[53] **Table 4.13.3-2** identifies the water demand for the different proposed Project components.

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[53] The estimated water demand of the Potential Future Related Development is enumerated separately in Section 4.13.3.6.2.

[Draft]

Table 4.13.3-2 (1 of 2): Calculated Project Water Demand Change

PROPOSED PROJECT WATER USAGE

PROPOSED USE[1/]	QUANTITY	UNIT	WATER USE FACTOR[3/] GPD/UNIT	BASE DEMAND GPD	REQUIRED WATER SAVINGS[4/] GPD	PROPOSED WATER DEMAND GPD	PROPOSED WATER DEMAND AF/Y
Consolidated Rental Car Facility							
Customer Service Building	174,000	Sf	0.05	8,700			
CONRAC APM Station	22,800	Sf	0.05	1,140			
Bus Plaza	54,000	Sf	0.05	2,700			
Rental Car Ready/Return Parking[5/]	2,361,500	Sf	0.02	1,553			
QTA and Additional Site Functions	994,700	Sf	0.05	49,735			
Idle Storage Building Parking[5/]	2,267,000	Sf	0.02	1,491			
Airport Employee/Public Parking[5/]	752,000	Sf	0.02	494			
Car Wash[6/]	4,153,046	W/Y		494,952			
Landscaping[7/]	447,000	Sf		38,040			
Subtotal				598,805	323,494	275,311	308.41
Intermodal Transportation Facilities							
ITF West APM Station	24,000	Sf	0.05	1,200			
ITF West Parking[5/]	3,100,000	Sf	0.02	2,038			
ITF East APM Station	17,500	Sf	0.05	875			
ITF East Parking[5/]	2,760,000	Sf	0.02	1,815			
Landscaping[7/]	568,000	Sf		48,338			
Subtotal				54,266	26,994	27,272	30.55
Automated People Mover System							
West CTA APM Station	105,000	Sf	0.05	5,250			
Center CTA APM Station	17,500	Sf	0.05	875			
East CTA APM Station	17,500	Sf	0.05	875			
APM MSF	68,000	Sf	0.05	3,400			
Office	41,000	Sf	0.12	4,920			
Train Wash[6/]	7,488	W/Y		1,231			
Landscaping[7/]	168,500	Sf		14,340			
Subtotal				30,891	9,048	21,843	24.47
Enabling Projects							
Parking Garage P2A[5/]	250,000	Sf	0.02	164			
Parking Garage P2B[5/]	295,000	Sf	0.02	194			
Parking Garage 5[5/]	510,000	Sf	0.02	335			
Subtotal				693	0	693	0.78
Proposed Water Demand Total[9/]						**325,119**	**364.21**

[Draft]

Table 4.13.3-2 (2 of 2): Calculated Project Water Demand Change

EXISTING WATER USAGE TO BE REMOVED			EXISTING WATER USE TO BE REMOVED	
EXISTING USE TO BE REMOVED[1/]	QUANTITY	UNIT	GPD	AF/Y
Enabling Projects				
Parking Garage P2A	388,000	Sf	255	
Parking Garage P2B	322,500	Sf	212	
Parking Garage 5	346,000	Sf	228	
Restaurant Building	5,100	Sf	4,250	
Subtotal			4,945	5.54
Property Acquisition Total			116,256	130.23
Existing to be Removed Water Demand Total[2/ 9/]			**121,201**	**135.77**

NET ADDITIONAL WATER DEMAND	GPD	AF/Y
Proposed Water Demand Total	325,119	364.21
Less Existing to be Removed Total	-121,201	-135.77
Less Additional Conservation[8/]	-51,327	-57.50
Net Additional Water Demand[9/]	**152,591**	**170.94**[10/]

NOTES:

CONRAC = Consolidated Rental Car Facility; APM = Automated People Mover System; ITF = Intermodal Transportation Facility

CTA = Central Terminal Area; QTA =Quick Turnaround Area; GPD = Gallons per Day; Sf = Square Feet; W/Y = Washes/Year

AF/Y = Acre-Feet per Year

1/ Provided by LAWA in e-mail communication and confirmed in Scope Confirmation e-mail.

2/ Existing water demand for Property Acquisition is based on the LADWP billing data for properties that have been acquired or would be acquired by LAWA for Proposed Project. Existing water demand for Enabling Projects is based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table. 12 times/year cleaning assumption is applied to parking water uses. Enabling Projects that do not change water demand are excluded.

3/ Proposed indoor water uses are based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available at http://www.lacitysan.org/fmd/pdf/sfcfeerates.pdf.

4/ The proposed development land uses would conform to Water-Efficiency Requirements Ordinance No. 180822, 2013 California Plumbing Code, 2013 California Green Building Code, 2014 Los Angeles Plumbing Code, 2014 Los Angeles Green Building Code, and Water Code Division 6, Part 2.12, Section 10951.

5/ Parking water uses: Based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table, 12 times/year cleaning assumption.

6/ Car wash and train wash water uses are provided by LAWA: 43.5 gallons of potable water per wash and 60 gallons of potable water per wash, respectively.

7/ Baseline landscaping water use is estimated per California Code of Regulations Title 23 Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance.

8/ Water conservation due to additional conservation commitments made by LAWA.

9/ Totals may not add due to rounding.

10/ Information presented in this table, Table 4.13.3-2, is based on data contained in Table 1 of the WSA. While Table 1 in the WSA indicates the proposed Project's net additional water demand is 326,729 gpd and 366 AF/Y, that total represents the combined water demand of the proposed Project plus potential future related development. For the purposes of this EIR, the water demands associated with proposed Project and with potential future related development are presented separately in Tables 4.13.3-2 and 4.13.3-4, respectively; however, the combined totals are consistent with the data in Table 1 of the WSA. The combined totals are discussed in Section 4.13.3.7.

SOURCE: LADWP, Water Resources Section, *Water Supply Assessment for the LAX Landside Access Modernization Program Project*, May 3, 2016 (Appendix Q of this EIR).
PREPARED BY: Ricondo & Associates, Inc., July 2016.

LAWA would comply with the following requirements for the entire LAX Landside Access Modernization Program. These requirements were incorporated by LADWP in the WSA for the entire LAX Landside Access Modernization Program:

- Use of plumbing fixtures and fixture fittings that will reduce overall use of potable water by 20 percent (LAMC, Section 99.05.303.2).
- Requirement that all indoor faucets (other than City Ordinance No. 180,822 requirements) have a flow rate of 1.5 gpm or less. Public use lavatory faucets shall include self-closing/automatic shutoffs. Pre-rinse spray valves installed in commercial kitchens shall have a flow rate of 1.6 gpm (I.AMC, Table 6.303.2.2).

The following items are required by the Water Efficiency Requirements Ordinance (Ordinance No. 180,822, effective December 1, 2009), and LAWA would implement these requirements for the entire LAX Landside Access Modernization Program:

- High-efficiency toilets: maximum flush volume not to exceed 1.28 gallons of water (effective) per flush
- High-efficiency urinals: maximum flush volume not to exceed 0.125 gallons of water per flush
- Faucets:
  - Private-use lavatory faucets: 1.5 gpm
  - Public-use lavatory faucets: 0.5 gpm; self-closing
  - Pre-rinse spray valve installed in commercial kitchens: 1.6 gpm
  - All other indoor faucets: 2.2 gpm
- Low-flow showerheads: maximum flow rate not to exceed 2.0 gpm, except emergency shower heads for health or safety purposes.

In addition to the aforementioned water conservation requirements, through the LAX Design Guidelines, LAWA has committed to implement the following water conservation measures as part of the LADWP WSA for the LAX Landside Access Modernization Program:

- Landscape-related conservation measures such as rotating sprinkler nozzles, drip irrigation, and weather based irrigation controllers.
- Use of plumbing fixtures and fixture fittings that will reduce overall use of potable water by 20 percent (LAMC, Section 99.05.303.2).
- Use of high-efficiency toilets with flush volume of 1.0 gallons of water per flush.
- Requirement that all indoor faucets (other than City Ordinance No. 180,822 requirements) have a flow rate of 1.5 gpm or less. Public use lavatory faucets shall include self-closing/automatic shutoffs. Pre-rinse spray valves installed in commercial kitchens shall have a flow rate of 1.6 gpm (I.AMC, Table 6.303.2.2).

- Provision of separate meters or submeters for indoor and outdoor potable water use (LAMC, Section 99.05.304.2).
- Use of irrigation controllers and sensors (LAMC, Section 99.05.304.3).
- Use of drought-tolerant plants. The project presents a hybrid landscape that provides a mix of non-native and native plantings in streetscape; development and parking areas; and along the Project's boundaries and property lines adjacent to the residential communities. The landscaping is required to be:
  - No invasive plant species as identified by the California Invasive Plant Inventory;
  - Compliant to the State Model Water Efficient Landscape Ordinance requirements;
  - California native plants are the preferred plant palette; and
  - 60 percent of the native or non-native landscaping identified should be classified with a Low (L) or Very Low (VL) Plant Factor(PF) value.

As indicated above in Table 4.13.3-2, implementation of these voluntary water conservation measures as part of the proposed Project would result in a savings of 57.5 AF/Y.

On May 3, 2016, the Board of Water and Power Commissioners adopted a WSA that concluded that (1) the proposed Project is consistent with the forecasts of the Southern California Association of Governments (SCAG) and the UWMP; and (2) LADWP has sufficient supply to meet the projected demand of the proposed Project (see Appendix Q). As such, the proposed Project would not cause exceedance of water supply and distribution capabilities nor require new supply or distribution facilities to be built. Impacts on water supply would be less than significant.

Based on LADWP's water supply demand estimate, the proposed Project would have an average water demand of approximately 153,000 gallons per day. It is estimated that 80 percent of the water demand (approximately 122,000 gallons per day) would be disposed to local sewers. As stated above, the HTP currently processes average wastewater flows of approximately 275 mgd, but has capacity to process dry weather flows of approximately 450 mgd. Thus, the sewage requirements of the proposed Project would have a less than significant impact on the existing sewage facilities.

Furthermore, as part of the proposed Project, LAWA will adopt new LAX Design Guidelines (see Appendix B) that include a list of 'green' measures to be incorporated into the design, construction, and operations of facilities at LAX. LAWA has based its LAX Design Guidelines on the mandatory and voluntary tiers defined in the LAGBC. In addition to the mandatory measures required for LAGBC Tier 1 compliance, additional measures related to water conservation have been identified for implementation at the CONRAC, ITFs, and APM MSF. These measures, which are part of the proposed Project and would further reduce water consumption, are shown in **Table 4.13.3-3**.

Table 4.13.3-3 (1 of 2): Water Conservation Sustainability Guidelines

	LOCATION		
INITIATIVE DESCRIPTION	**CONRAC**	**ITFs**	**APM MAINTENANCE AND STORAGE FACILITY**
Reduce peak runoff in compliance with Section 5.106.3.1. Employ at least two methods to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses.	Mandatory	Mandatory	Mandatory
A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 40% shall be provided. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed sues, may be used in the calculations demonstrating the 40% reduction. The nonpotable water systems shall comply with the current edition of the Los Angeles Plumbing Code.	If Feasible	If Feasible	If Feasible
Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: 1. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. 2. Tank-type water closets shall be certified to the performance criteria of the U.S EPA WaterSense Specification for Tank-Type Toilets. 3. The effective flush volume of urinals shall not exceed 0.5 gallons per flush. 4. Showerheads. a. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S EPA WaterSense Specification for Showerheads. b. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.	Mandatory	Mandatory	Mandatory
Dishwashers shall meet the criteria in Section A5.303.3(2)(a).	Mandatory	N/A	Mandatory
Ice makers shall be air cooled.	Mandatory	N/A	Mandatory
Each building shall reduce the generation of wastewater by utilizing nonpotable water systems.	If Feasible	If Feasible	If Feasible
New buildings and facilities shall be dual plumbed for potable and recycled water systems.	If Feasible	If Feasible	If Feasible

Table 4.13.3-3 (2 of 2): Water Conservation Sustainability Guidelines

	LOCATION		
INITIATIVE DESCRIPTION	**CONRAC**	**ITFs**	**APM MAINTENANCE AND STORAGE FACILITY**
Automatic irrigation system controllers installed at the time of final inspection shall comply with the following: 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.	Mandatory	Mandatory	Mandatory
Reduce the use of potable water to a quantity that does not exceed 55% of ETo times the landscape area. A calculation demonstrating the applicable potable water use reduction shall be provided.	Mandatory	Mandatory	Mandatory
Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment.	Mandatory	Mandatory	Mandatory
Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation.	Mandatory	Mandatory	Mandatory
Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the Los Angeles Plumbing Code.	Mandatory	Mandatory	Mandatory
Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) shall use recycled water.	If Feasible	If Feasible	If Feasible
Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C1602.	If Feasible	If Feasible	If Feasible
Employ moisture control measures by preventing irrigation spray on structures from sprinklers.	Mandatory	Mandatory	Mandatory

NOTES:

CONRAC = Consolidated Rental Car Facility

ITF = Intermodal Transportation Facility

SOURCE: City of Los Angeles, Ordinance No. 182,849, Chapter IX, Article 9, California Green Building Standards Code, 2013.
PREPARED BY: Ricondo & Associates, Inc., July 2016.

Supply Facilities and Distribution Infrastructure

As noted above, LADWP has indicated that it possesses the water supply to service the long-term needs of the proposed Project. The proposed Project is located in an urbanized portion of the City of Los Angeles that is well served by water and wastewater distribution infrastructure. Existing mains, trunk lines and services lines provide service throughout the Project area. Other than new connections at the point of contact, no new distribution infrastructure would be required. As such, the proposed Project would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, which could cause significant environmental impacts. Impacts would be less than significant.

Interference with Major Utility Facilities

Once construction is complete and infrastructure within the Project area has been relocated or protected, as described above, the proposed Project would not substantially interfere with water or wastewater infrastructure on an ongoing basis. No impacts would occur.

4.13.3.6.2 LAX Landside Access Modernization Program Potential Future Related Development

Water Supply

As discussed in Chapter 2, *Description of the Proposed Project,* the portions of the Project area that would be cleared and utilized for construction staging may later be made available for development with Airport-related commercial uses. The parcels proposed for potential future related development are located adjacent to the CONRAC, ITF East, APM MSF, and ITF West (see Figure 2-51). While there are no specific plans for development of these parcels at this time, the development of these parcels could accommodate up to 900,000 square feet of commercial development; therefore, water demand assumptions were based on this assumed use. At such time as individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary, to identify potential water and wastewater impacts; however, based on the general nature and location of the type of development and utility demand associated with that development, the extent of utilities information already known about the overall Project area, and the basic approach to how utilities information is incorporated into Project design, engineering, and construction documents, it is considered unlikely that the potential future related development would substantially interfere with major utility facilities that would result in significant direct or indirect impacts on the environment that are not already addressed in this EIR.

The WSA prepared by LADWP also estimated water demand of 195 AF/Y for the potential future related development, assuming a range of potential commercial uses. **Table 4.13.3-4** identifies the water demand projected for the potential related development.

[Draft]

Table 4.13.3-4: Proposed Additional Water Usage from Future Related Development

PROPOSED ADDITIONAL WATER USAGE							
			WATER USE FACTOR[2/]	**BASE DEMAND**	**REQUIRED WATER SAVINGS[3/]**	**PROPOSED WATER DEMAND**	
PROPOSED USE[1/]	**QUANTITY**	**UNIT**	**GPD/UNIT**	**GPD**	**GPD**	**GPD**	**AF/Y**
Future Related Development							
Office	300,000	Sf	0.12	36,000			
Hotel	400	Room	120	48,000			
Commercial	200,000	Sf	0.05	10,000			
Conference Center	100,000	Sf	0.12	12,000			
Parking[4/]	269,400	Sf	0.02	177			
Cooling Tower[5/]	2,500	Ton	26.73	66,825			
Landscaping[6/]	452,700	Sf		38,525			
Proposed Additional Water Demand[7/]				**211,527**	**37,389**	**174,13**	**195.07**

NOTES:

GPD = Gallons per Day

Sf = Square Feet

AF/Y = Acre-Feet per Year

1/ Provided by LAWA in e-mail communication and confirmed in Scope Confirmation e-mail.

2/ Proposed indoor water uses are based on 2012 City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table available at http://www.lacitysan.org/fmd/pdf/sfcfeerates.pdf.

3/ The proposed development land uses would conform to Water-Efficiency Requirements Ordinance No. 180822, 2013 California Plumbing Code, 2013 California Green Building Code, 2014 Los Angeles Plumbing Code, 2014 Los Angeles Green Building Code, and Water Code Division 6, Part 2.12, Section 10951.

4/ Parking water uses: Based on City of Los Angeles Department of Public Works, Bureau of Sanitation Sewer Generation Rates table, 12 times/year cleaning assumption.

5/ Operating 18 hours/day, 365 days/year, 5.5 cycles of concentration and 55% of chiller capacity.

6/ Baseline landscaping water use is estimated per California Code of Regulations Title 23 Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance.

7/ Totals may not add due to rounding.

8/ Information presented in this table, Table 4.13.3-4, is based on data contained in Table 1 of the WSA. While Table 1 in the WSA indicates the proposed Project's net additional water demand is 326,729 gpd and 366 AF/Y, that total represents the combined water demand of the proposed Project plus potential future related development. For the purposes of this EIR, the water demands associated with the proposed Project and with potential future related development are presented separately in Tables 4.13.3-2 and 4.13.3-4, respectively; however, the combined totals are consistent with the data in Table 1 of the WSA. The combined totals are discussed in Section 4.13.3.7.

SOURCE: LADWP, Water Resources Section, *Water Supply Assessment for the LAX Landside Access Modernization Program Project*, May 3, 2016 (Appendix Q of this EIR).

PREPARED BY: Ricondo & Associates, Inc., July 2016.

On May 3, 2016, the Board of Water and Power Commissioners adopted a WSA that concluded that (1) the proposed Project (including the potential future related development) is consistent with the forecasts of SCAG and the UWMP; and (2) LADWP has sufficient supply to meet the projected demand of the proposed Project (including the potential future related development) (see Appendix Q). As such, the potential future related development would not cause exceedance of water supply and distribution capabilities nor require new supply or distribution facilities to be built. Impacts on water supply would be less than significant.

Based on LADWP's water supply demand estimate, the potential future related development would have an average water demand of approximately 174,000 gallons per day. It is estimated that 80 percent of the water demand (approximately 139,000 gallons per day) would be disposed to local sewers. As stated above, the HTP currently processes average wastewater flows of approximately 275 mgd, but has capacity to process dry weather flows of approximately 450 mgd. Thus, the sewage requirements of the potential future related development would have a less than significant impact on the existing sewage facilities.

Supply Facilities and Distribution Infrastructure

As noted above, construction of the proposed Project is not expected to exceed regional water supply. The proposed Project is located in an urbanized portion of the City of Los Angeles that is well served by water and wastewater distribution infrastructure. Existing mains, trunk lines, and services lines provide service throughout the Project area. Other than new connections at the point of contact, no new distribution infrastructure would be required. As such, construction of the proposed Project would not require new water supply or wastewater facilities and distribution infrastructure, or capacity-enhancing alterations to existing facilities, which could cause significant environmental impacts. Impacts would be less than significant.

Interference with Major Utility Facilities

The future development that could occur may require infrastructure improvements within the adjacent rights-of-way in order to establish service connections. However, these improvements would be standard connections that would be required to comply with the City of Land Angeles Code and permitting processes. As such, the related development would not result in significant direct or indirect impacts on the environment. Impacts would be less than significant.

4.13.3.7 Cumulative Impacts

The proposed Project's net additional water demand, when considering the proposed Project's water demand (see Table 4.13.3-2) of 152,591 gpd and 170.94 AF/Y and the potential future related development water demand (see Table 4.13.3-4) of 174,138 gpd and 195.07 AF/Y would be 326,729 gpd and 366 AF/Y, which represents the combined water demand of the proposed Project plus potential future related development.

On May 3, 2016, the Board of Water and Power Commissioners adopted a WSA that concluded that (1) the proposed Project (including the potential future related development) is consistent with the forecasts of SCAG and the UWMP; and (2) LADWP has sufficient supply to meet the projected demand of the proposed Project (including the potential future related development) (see Appendix Q). As such, the proposed Project combined with the potential future related development would not cause exceedance of water supply and distribution capabilities nor require new supply or distribution facilities to be built. Impacts on water supply would be less than significant.

Based on LADWP's water supply demand estimate, the proposed Project combined with the potential future related development would have an average water demand of approximately 326,729 gallons per day. It is estimated that 80 percent of the water demand (approximately 261,000 gallons per day) would be disposed to local sewers. As stated above, the HTP currently processes average wastewater flows of approximately 275 mgd, but has capacity to process dry weather flows of approximately 450 mgd. Thus, the sewage requirements of the proposed Project combined with the potential future related development would have a less than significant impact on the existing sewage facilities.

As identified in Chapter 3, *Overview of Project Setting,* other ongoing and future projects have been identified within the Project area. These projects are related to accommodating the projected growth in LAX passengers. However, cumulative impacts on water supply and capacity occur over a regional scale. Forecasts of water and wastewater demand included in the UWMP and the IRP utilized projections based on SCAG growth forecasts that have incorporated growth in passengers at LAX. In addition, the WSA prepared for the proposed Project by LADWP, determined that the anticipated water demand for the proposed Project combined with the potential future related development falls within UWMP's projected water supplies for normal, single-dry, and multiple-dry years through the year 2035 and is within the UWMP's 25-year water demand growth projections. The WSA for the proposed Project was approved based on the fact that the proposed Project's water demand falls within the scope of UWMP's project increase in citywide water demands, while anticipating multi-dry year water supply conditions occurring at the same time (see Appendix Q). Based on LADWP's analysis, significant cumulative impacts on supply and distribution capabilities or on new supply facilities and distribution infrastructure for water and wastewater are unlikely, thus, cumulative impacts would be less than significant.

4.13.3.8 Mitigation Measures

As indicated in Section 4.13.3.6, impacts related to water use would be less than significant; therefore, no mitigation measures are required.

4.13.3.9 Level of Significance After Mitigation

Impacts related to water use from implementation of the proposed Project and potential future related development would be less than significant.

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5. Alternatives

5.1 Introduction

The 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 proposed Project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6). Within that context, this Chapter discusses alternatives to the proposed Project.

Key provisions of the 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 this EIR.

- "An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible[1] 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 proposed 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

[1] "Feasible" means capable of being accomplished within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. (CEQA Guidelines Section 15364).

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)).
- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (15126.6(f)(3)).

5.2 Significant Impacts of the LAX Landside Access Modernization Program

In accordance with Section 15126.6(b) of the State CEQA Guidelines, the alternatives in this chapter have been selected to evaluate means for avoiding or substantially reducing the significant impacts of the proposed LAX Landside Access Modernization Program identified in Chapter 4 of this EIR. **Table 5-1** presents a summary of findings for each of the resources analyzed in this EIR for the proposed Project. Resources were also analyzed at a programmatic level for the potential future related development of the proposed Project; these results are shown in **Table 5-2**. A summary of impacts for each significantly impacted resource category is presented below.

5.2.1.1 LAX Landside Access Modernization Program Project

As shown in Table 5-1, impacts related to aesthetics, air quality, human health, biological resources, cultural resources, greenhouse gas emissions, hazards and hazardous materials, hydrology, noise, public services, and transportation/traffic were determined to be significant prior to mitigation. Of these significant impacts, impacts related to human health, biological resources, hazards and hazardous materials, hydrology, and noise were determined to be less than significant with incorporation of Project-specific mitigation measures. The following provides a further description of the significant impacts for impacts pertaining to each resource category that cannot be mitigated to a level that is less than significant.

[Draft]

Table 5-1 (1 of 2): Significant Impacts of the Proposed Project

RESOURCE CATEGORY	PROPOSED PROJECT (BEFORE MITIGATION)	MITIGATION INCORPORATED?	PROPOSED PROJECT (AFTER MITIGATION)
Aesthetics			
Visual Character	Significant	Yes	Significant and Unavoidable
Shading	Less than Significant	No	Less than Significant
Light and Glare	Less than Significant	No	Less than Significant
Air Quality			
Construction	Significant (VOC, NO_x, NO_2, PM_{10})	Yes	Significant and Unavoidable (VOC, NO_x, PM_{10})
Operations	Significant (PM_{10})	Yes	Significant and Unavoidable (PM_{10})
Human Health			
Construction	Significant (Cancer risks)	Yes	Less than Significant
Operations	Less than Significant	Yes	Less than Significant
Biological Resources			
Construction	Significant	Yes	Less than Significant
Operations	Less than Significant	No	Less than Significant
Cultural Resources			
Historic Resources	Significant	Yes	Significant and Unavoidable
Archaeological Resources	Potentially Significant	Yes	Less than Significant
Paleontological Resources	Potentially Significant	Yes	Less than Significant
Human Remains	Less than Significant	No	Less than Significant
Greenhouse Gas Emissions			
No Net Increase (quantifiable)	Less than Significant	No	Less than Significant
Plan/Policy Consistency	Significant	Yes	Significant and Unavoidable
Hazards and Hazardous Materials			
Unauthorized and Uncontrolled Release	Less than Significant	No	Less than Significant
Exposure of Workers	Less than Significant	No	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	No	Less than Significant
Interfere with Ongoing Remediation	Significant	Yes	Less than Significant
Interfere with Emergency Response or Emergency Evacuation Plan	Significant	Yes	Less than Significant

Table 5-1 (2 of 2): Significant Impacts of the Proposed Project

RESOURCE CATEGORY	PROPOSED PROJECT (BEFORE MITIGATION)	MITIGATION INCORPORATED?	PROPOSED PROJECT (AFTER MITIGATION)
Hydrology, Water Quality, and Groundwater			
Hydrology	Significant	Yes	Less than Significant
Water Quality	Less than Significant	No	Less than Significant
Groundwater	Less than Significant	No	Less than Significant
Land Use and Planning	Less than Significant	No	Less than Significant
Noise			
Road Traffic Noise	Less than Significant	No	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Significant	Yes	Less than Significant
Transit Noise and Vibration	Less than Significant	No	Less than Significant
Population and Housing	Less than Significant	No	Less than Significant
Public Services			
Fire Protection	Significant	Yes	Less than Significant
Law Enforcement	Significant	Yes	Less than Significant
Schools	Significant	Yes	Significant and Unavoidable
Transportation/ Traffic			
On-Airport Traffic	Less than Significant	No	Less than Significant
Off-Airport Traffic	Significant	Yes	2024 – Less than Significant 2035 - Significant and Unavoidable
Construction Traffic	Significant	Yes	Significant and Unavoidable
Utilities and Service Systems and Energy			
Energy	Less than Significant	No	Less than Significant
Water	Less than Significant	No	Less than Significant

SOURCE: Ricondo & Associates, Inc., August 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Table 5-2 (1 of 2): Significant Impacts of the Potential Future Related Development

RESOURCE CATEGORY	POTENTIAL FUTURE RELATED DEVELOPMENT (BEFORE MITIGATION)	MITIGATION INCORPORATED?	POTENTIAL FUTURE RELATED DEVELOPMENT (AFTER MITIGATION)
Aesthetics			
Visual Character	Less than Significant	No	Less than Significant
Shading	Less than Significant	No	Less than Significant
Light and Glare	Less than Significant	No	Less than Significant
Air Quality			
Construction	Significant (NO_x)	Yes	Less than Significant
Operations	Significant (VOC, NOx, and PM_{10})	Yes	Significant (VOC, NOx, and PM_{10})
Human Health			
Construction	Significant (Cancer risks)	Yes	Less than Significant
Operations	Less than Significant	Yes	Less than Significant
Biological Resources			
Construction	Less than Significant	No	Less than Significant
Operations	Less than Significant	No	Less than Significant
Cultural Resources			
Historic Resources	Less than Significant	No	Less than Significant
Archaeological Resources	Potentially Significant	Yes	Less than Significant
Paleontological Resources	Potentially Significant	Yes	Less than Significant
Human Remains	Less than Significant	No	Less than Significant
Greenhouse Gas Emissions			
Per Capita Efficiency Threshold	Significant	Yes	Significant and Unavoidable
Plan/Policy Consistency	Significant	Yes	Significant and Unavoidable
Hazards and Hazardous Materials			
Unauthorized and Uncontrolled Release	Less than Significant	No	Less than Significant
Exposure of Workers	Less than Significant	No	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	No	Less than Significant
Interfere with Ongoing Remediation	Significant	Yes	Less than Significant
Interfere with Emergency Response or Emergency Evacuation Plan	Less than Significant	No	Less than Significant
Hydrology, Water Quality, and Groundwater			
Hydrology	Significant	Yes	Less than Significant
Water Quality	Less than Significant	No	Less than Significant
Groundwater	Less than Significant	No	Less than Significant

[Draft]

Table 5-2 (2 of 2): Significant Impacts of the Potential Future Related Development

RESOURCE CATEGORY	POTENTIAL FUTURE RELATED DEVELOPMENT (BEFORE MITIGATION)	MITIGATION INCORPORATED?	POTENTIAL FUTURE RELATED DEVELOPMENT (AFTER MITIGATION)
Land Use and Planning	Less than Significant	No	Less than Significant
Noise			
Road Traffic Noise	Less than Significant	No	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Significant	Yes	Less than Significant
Transit Noise and Vibration	Less than Significant	No	Less than Significant
Population and Housing	Less than Significant	No	Less than Significant
Public Services			
Fire Protection	Less than Significant	No	Less than Significant
Law Enforcement	Less than Significant	No	Less than Significant
Schools	Less than Significant	No	Less than Significant
Transportation/ Traffic			
On-Airport Traffic	Less than Significant	No	Less than Significant
Off-Airport Traffic	Significant	Yes	Significant and Unavoidable
Construction Traffic	Significant	No	Significant and Unavoidable
Utilities and Service Systems and Energy			
Energy	Less than Significant	No	Less than Significant
Water	Less than Significant	No	Less than Significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

Aesthetics

- Visual impacts, including aesthetics and visual character, to the Theme Building.
- Cumulatively considerable contribution to significant cumulative visual impacts, including aesthetics and visual character, to the Theme Building.

Air Quality

- Construction-related regional emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_X).
- Construction-related local concentrations of respirable particulate matter (PM_{10}).
- Operations-related local concentrations of PM_{10}.
- Cumulatively considerable contribution to significant cumulative construction-related air quality impacts, based on significant construction-related Project impacts summarized above.
- Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related Project impacts summarized above.

Cultural Resources

- Indirect impacts to the Theme Building.
- Cumulatively considerable contribution to significant cumulative impacts to the Theme Building.

Greenhouse Gases

- Consistency with plans/policies related to GHG emission reductions.

Public Services

- Relocation of two schools located within the Project site, if mitigation measures are not adopted by Los Angeles Unified School District (LAUSD).

Off-Airport Transportation

- Level of service impacts at one intersection, La Cienega Boulevard and Arbor Vitae Street.
- Level of service impacts at one freeway mainline segment, I-405 at La Cienega Boulevard (northbound).

Construction Surface Transportation

- Impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route.

5.2.1.2 LAX Landside Access Modernization Program Potential Future Related Development

As shown in Table 5-2, impacts related to air quality, human health, cultural resources, greenhouse gas emissions, hazards and hazardous materials, hydrology, noise, and transportation/traffic were determined to be significant prior to mitigation. Of these significant impacts, impacts related to human health, cultural resources, hazards and hazardous materials, hydrology, and noise were determined to be less than significant with incorporation of Project-specific mitigation measures. The following provides a further description of the significant impacts for impacts pertaining to each resource category that cannot be mitigated to a level that is less than significant.

Air Quality

- Operations-related regional emissions of VOC, NO_X, and PM_{10}.
- Based on the regional emissions analysis, the potential future related development would exceed operations-related local concentrations thresholds for several pollutants.
- Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related impacts summarized above.

Greenhouse Gases

- Exceeds per capita efficiency threshold per year per employee
- Consistency with plans/policies related to GHG emission reductions.

Off-Airport Transportation

- Level of service impacts at one intersection, La Cienega Boulevard and Arbor Vitae Street.
- Level of service impacts at two freeway mainline segments, I-405 at La Cienega Boulevard and I-405 at La Tijera Boulevard (northbound).

Construction Surface Transportation

- Impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route.

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 LAX Landside Access Modernization Program and of the potential future related development.

The underlying purposes of the proposed Project are to improve access to LAX and relieve congestion on Airport and surrounding roadways. The Project objectives for the LAX Landside Access Modernization Program that support the underlying purposes are:

(a) Enhance the passenger experience by providing new access options for all modes of travel, including direct connections to transit, convenient parking, and commercial vehicles;

(b) Provide easier and more efficient access to rental cars and non-CTA parking facilities;

(c) Relieve congestion at LAX and on the surrounding street system by developing a flexible transportation system that provides alternatives to the CTA for passengers, airport and other employees, and airport-related vendors accessing LAX;

(d) Promote the sustainability of LAX by improving the efficiency and operation of the surface transportation system in which LAX operates;

(e) Enhance and integrate the overall design of LAX Landside Access Modernization Program facilities with existing CTA structures and new airport facilities both inside and outside the CTA;

(f) Maintain airport operations during construction; and

(g) Ensure the highest and best use for conversion of any potential future surplus property in compliance with FAA grant obligations.

These objectives are consistent with the following general goals LAWA has established for LAX as part of its sustainability program and policies that strive to minimize the impact of LAX operations on the surrounding communities:

- Build new efficient transportation facilities that conserve energy, water, and other resources.
- Reduce traffic congestion and vehicle miles traveled thereby improving air quality.
- Reduce air emissions from transportation sources to comply with Senate Bill (SB) 375.
- Design and construct the new transportation facilities in a manner that minimizes disruptions to airport operations.
- Design and construct the new transportation facilities in a manner that integrates with existing and new airport facilities.
- Utilize airport property located next to the new transportation facilities for construction staging, construction activities, and/or temporary relocation areas to build the APM, CONRAC, ITFs, roadway improvements and other Project elements. Upon completion of the new transportation facilities, consider new uses complementary to LAX and the surrounding uses that meet the needs of passengers, visitors, employees, and guests of hotels in the area.
- Generate additional employment opportunities and economic activity that benefit the communities located around LAX and the City of Los Angeles.

5.4 Alternatives

Elements of the proposed Project were included in the 2004 LAX Master Plan and the 2013 Specific Plan Amendment Study, but as noted in Chapter 2, *Project Description*, the Project elements have evolved since both of these studies were completed. The following provides additional evaluation of alternatives to the proposed Project.

As described at the beginning of this chapter, the significant impacts associated with the proposed Project pertain to both construction activities and operations. Alternatives presented in this section include: (1) potential alternatives that were initially considered but were screened-out from further consideration due to their infeasibility or readily apparent inability to avoid or substantially reduce the significant impacts of the Project; and (2) design alternatives/variations that are fully evaluated. Also, as required by CEQA, the "no project" alternative is described in this section.

5.4.1 PRELIMINARY ALTERNATIVES SCREENED-OUT FROM FURTHER CONSIDERATION

This section describes preliminary alternatives that were considered during the Draft EIR scoping process, and why they were rejected from detailed consideration in the Draft EIR. Please note that most of these alternatives were for individual components of the proposed Project, not to the Project as a whole. An EIR is not required to consider alternatives to individual project components. *California Native Plant Society v, City of Santa Cruz* (2009) 177 Cal.App. 4th 957.

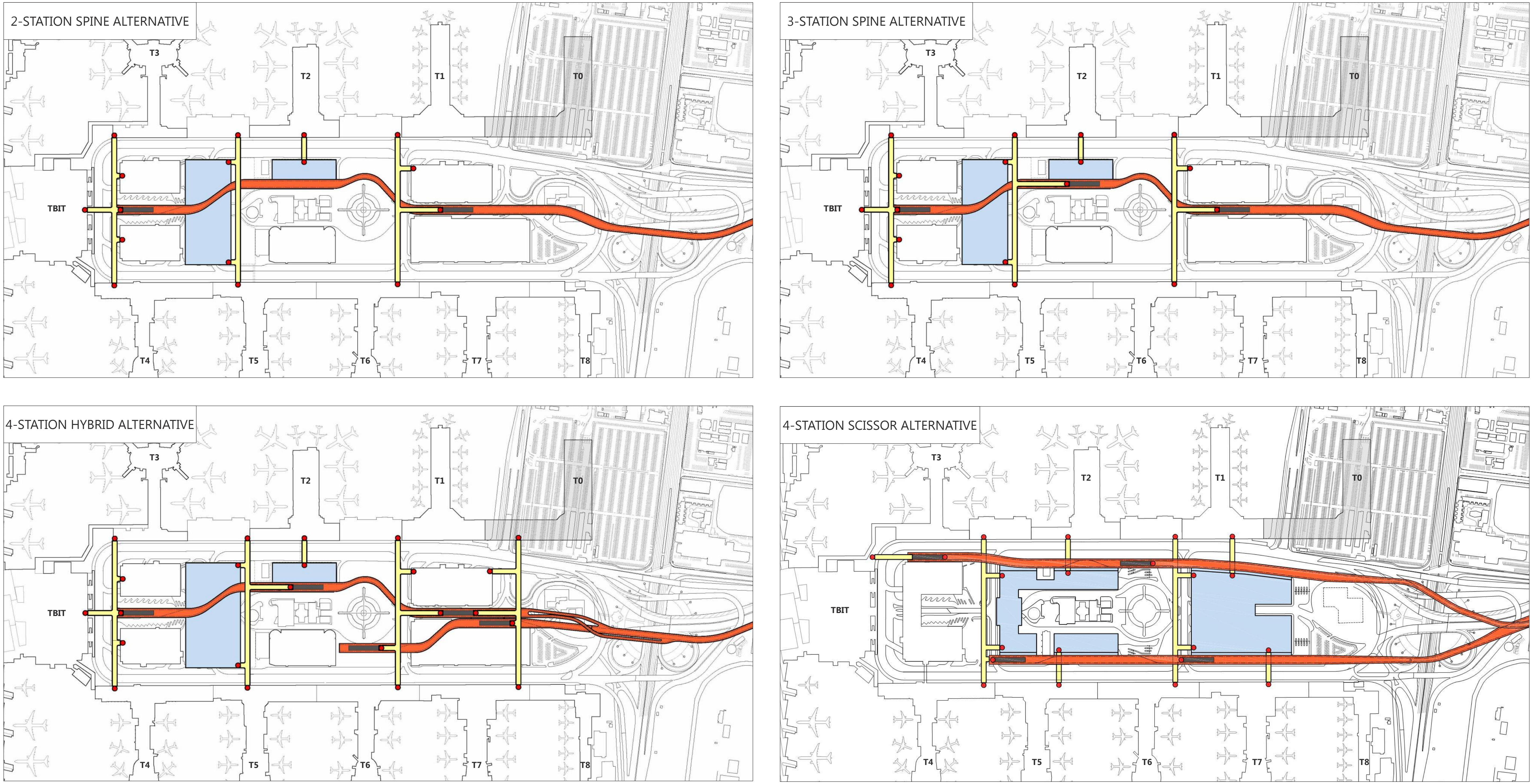
5.4.1.1 Automated People Mover Alignment Alternatives

5.4.1.1.1 Central Terminal Area APM Alignments

In March 2015, LAWA staff conducted an alternatives analysis of the APM alignment within the CTA, examining different vertical (below grade, at grade, and above grade) and horizontal alignments, as well as the number and location of the APM stations.[2] Through this analysis, LAWA determined it was infeasible to construct a below grade or at grade alignment within the CTA. Based on the number of underground utilities and infrastructure beneath grade, this alignment option was considered infeasible. Similarly, development of an at-grade APM alignment would prohibit ongoing airport operations within the CTA during construction. Therefore, based on this analysis, all alignments analyzed include elevated guideways. As a result of the analysis, four APM alternatives were considered viable: these are described in greater detail below and shown in **Figure 5-1**:

- **2-Station Spine Alternative**. This alternative would be located above Center Way throughout the alignment inside the CTA. One station would be located between Parking Garages P1 and P7, and the second station would be located between Parking Garages P3 and P4. Elevated pedestrian walkways would be utilized to connect the stations to the adjacent terminal buildings.
- **3-Station Spine Alternative**. This alternative is similar to the 2-Station Spine Alternative, but would include a third interim station inside the CTA to the north of the LAX Theme Building. The additional station would only require minimal changes to the alignment proposed in the 2-Station Spine Alternative. This alternative was designed to improve passenger connectivity while maintaining limited impacts to Airport operations, and was ultimately selected as the preferred APM configuration.

[2] City of Los Angeles, Los Angeles World Airports, *LAX Connected, Board of Airport Commissioners Ground Transportation Workshop*, May 5, 2014, Available: http://www.connectinglax.com/files/5.5.14_BOAC.Briefing_LAX.Connected.pdf.



SOURCE: MapLAX 2014, September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 5-1

Central Terminal Area
APM Alternatives

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- **4-Station Scissor Alternative**. This alternative consists of a split APM alignment utilizing two corridors through the CTA: the northern section that runs parallel to World Way North and the southern section that runs parallel to World Way South. Both the north and southern sections would each have two stations, for a total of four stations. Stations along the northern alignment would be located to the south of Terminal 3 and to the north of the Theme Building. Stations along the southern alignment would be located to the north of Terminal 5 and to the south of Parking Garage P7, between Terminals 6 and 7. Elevated pedestrian walkways would be utilized to connect the stations to the adjacent terminal buildings.
- **4-Station Hybrid Alternative**. This alternative is a hybrid of the 3-Station Spine Alternative and the 4-Station Scissor Alternative. The northern section of the alignment is the same as the 3-Station Spine Alignment, including the locations of the APM stations. However, this alignment also includes a new track spur and two additional stations to the south. The two additional southern stations would be located to the south of the LAX Theme Building and at the northeast corner of Parking Garage P7. Elevated pedestrian walkways would be utilized to connect the stations to the adjacent terminal buildings.

5.4.1.1.2 West of the Central Terminal Area APM Alignments

Over the last 10 years, LAWA has identified and studied several APM alignments, including in the LAX Master Plan and the LAX Specific Plan Amendment Study (SPAS).

LAX Master Plan APM

In the 2004 Master Plan, LAWA sought to address congestion problems by proposing transportation facilities that would provide new options for passengers and employees to access the passenger terminal areas. These facilities, which were approved at a programmatic level in 2004, included an APM system connecting a consolidated rental car facility, intermodal transportation facilities, and the CTA. The APM studied in the LAX Master Plan EIR/EIS includes two separate, but coordinated routes, as shown on **Figure 5-2**. One route would connect the intermodal transportation facility and the consolidated rental car facility to the CTA along a route that generally would follow W. 98th Street and Aviation Boulevard. A second route would connect the ground transportation center with the CTA via a route that would be located along the south side of Century Boulevard.

LAX Specific Plan Amendment Study (SPAS)

In July 2012, LAWA prepared the LAX Specific Plan Amendment Study (SPAS), which identified 9 alternatives, two of which contained an APM alignment. Alternative 3 reflected the implementation of the APM alignment proposed under the LAX Master Plan Alternative D. Alternative 9 was a ground access improvement alternative that included a single APM alignment connecting the consolidated rental car facility, intermodal transportation facilities, and the CTA. The elevated alignment studied in the SPAS Final EIR generally follows W. 98th Street from the CTA to just east of Aviation Boulevard in Manchester Square. The proposed APM alignment under the preferred SPAS alternative, as included in the SPAS Final EIR, is shown on **Figure 5-3**.

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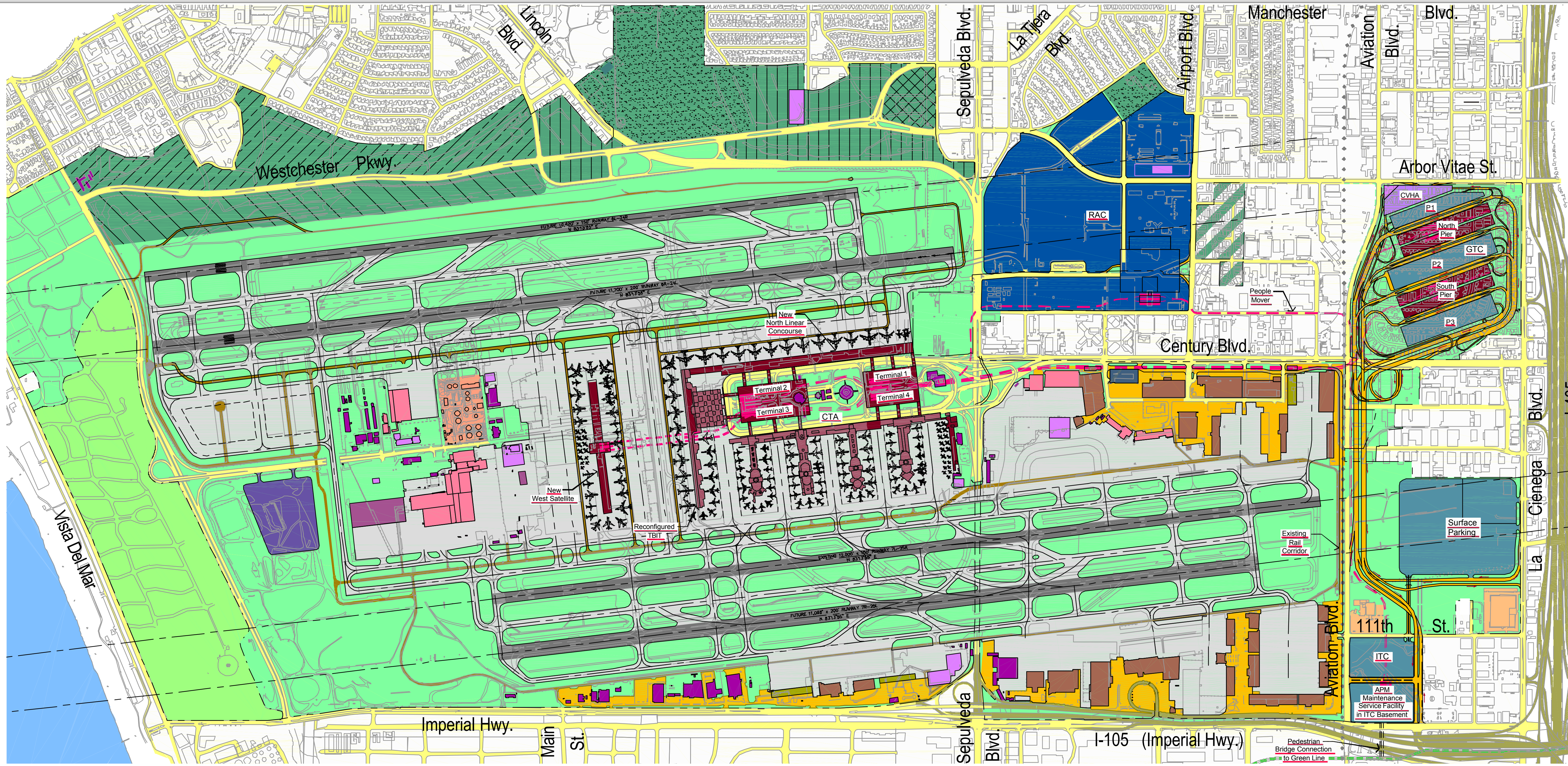

LEGEND

- Airport Property Boundary Line
- El Segundo Blue Butterfly Habitat Restoration Area
- Airfield/Airport Open Space
- Runways
- Taxiways/Aircraft Aprons
- Existing Terminal Buildings
- Existing Cargo Building
- Existing Maintenance Facility
- Existing Light Rail Transit
- Existing Collateral Development
- Existing Ancillary Facility
- Existing Roadways
- Existing Commercial Use
- Existing Off-Airport Use
- Existing Employee Parking
- Existing Fuel Farm
- Proposed Terminals
- Existing MTA Right-of-Way
- Proposed Cargo Building
- Proposed Maintenance Facility
- Proposed Ancillary Facility
- Proposed Airside Service Roads
- Proposed Public Parking
- Proposed Commercial Vehicle Staging Area
- Proposed Employee Parking
- Airport Landside
- Proposed People Mover
- Proposed Rental Car Facility
- High Density Mixed Use (Hotel, Office, Retail)
- Medium Density Mixed Use (Hotel, Office, Retail)
- R/D Business Park
- Airport Related
- Golf Course/Open Space/Recreation
- ANMP Acquisition Area

SOURCE: Los Angeles World Airports, LAX Master Plan Final EIR, 2004.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 5-2

NORTH 0 Not To Scale

LAX Master Plan Alternative D

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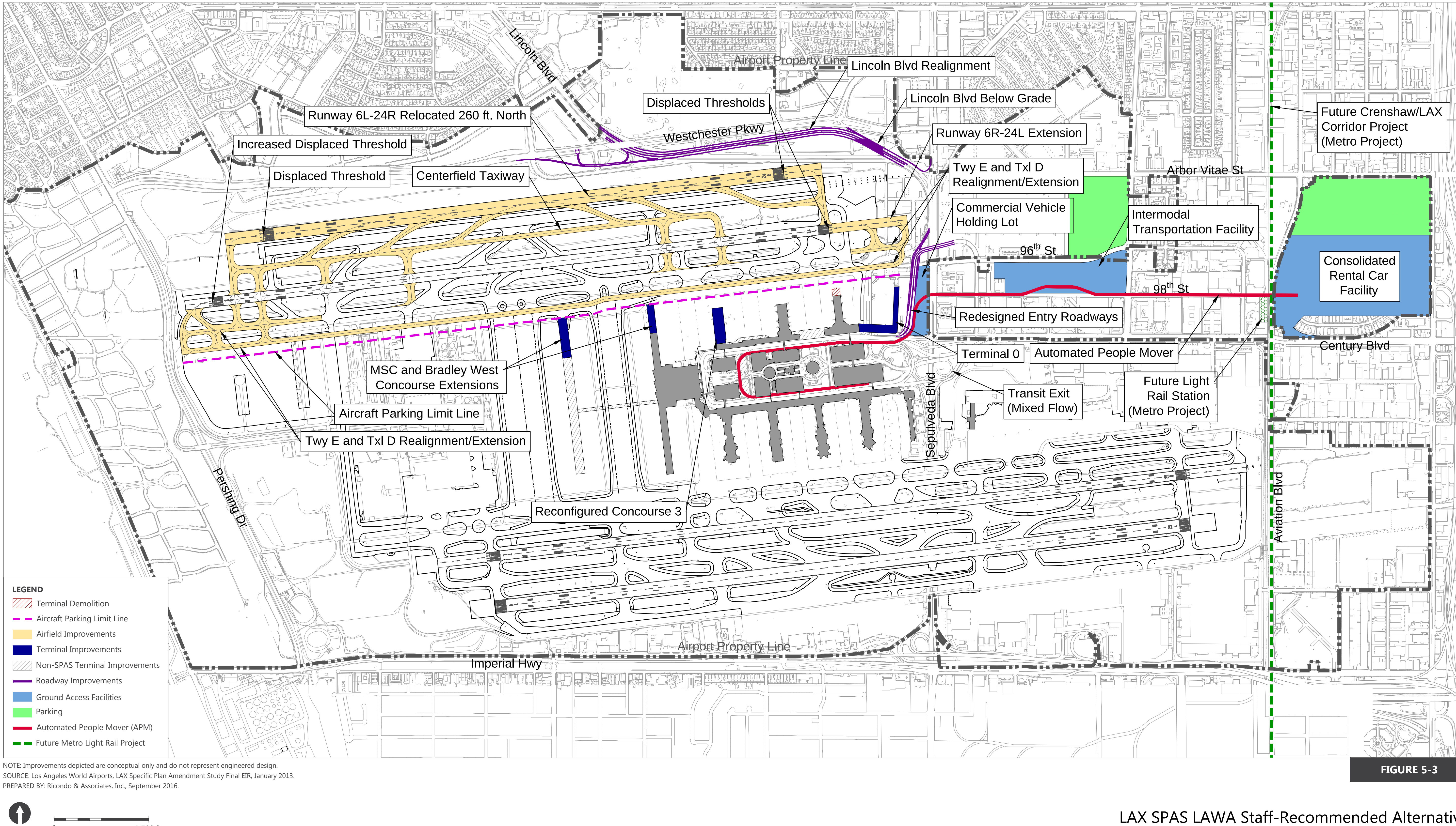

NOTE: Improvements depicted are conceptual only and do not represent engineered design.
SOURCE: Los Angeles World Airports, LAX Specific Plan Amendment Study Final EIR, January 2013.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 5-3

LAX SPAS LAWA Staff-Recommended Alternative

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Conclusion

The criteria utilized by LAWA to assess the alternatives included safety and security, constructability, roadway operations, airside/terminal operations, APM operations, pedestrian access, and phasing. Additionally, the APM system must accommodate approximately 5,800 passengers with luggage during the peak hours per direction, avoid significantly impacting existing Airport operations, and be able to be implemented in an expedited fashion. After careful consideration of the alternatives evaluation performed by LAWA staff that applied these criteria, the Board of Airport Commissioners selected for further study, a spine alignment with six APM stations, three stations within the CTA and three stations outside of the CTA. Also, it should be noted that none of the preliminary alignment alternatives would avoid or substantially lessen the proposed Project's significant impacts,

5.4.1.1.3 Personal Rapid Transit Alternative

The Personal Rapid Transit (PRT) alternative was suggested during the NOP process and would consider personal rapid transit pods (which could include a fleet of battery powered, driverless pods) each of which could transport up to four passengers and their luggage from the CONRAC and ITFs to the CTA via an elevated guideway that would follow the upper roadway and the upper levels of the CTA parking garages. Alternatively, this alternative could place these pods at grade which would cross busy roadway intersections.

As with the other APM alignment alternative, the alternative was precluded from further analysis as it would not avoid or substantially lessen significant impacts. Further, the proposed APM trains would serve a much larger population per train, thus better reducing congestion near the CTA and related vehicle emissions. This alternative would require a dedicated guideway and reconfiguration of the Airport access roadways and CTA garages, and would impact views of the Theme Building. For these reasons, this alternative was not evaluated in detail in the Draft EIR.

5.4.1.1.4 Constrained Growth Alternative

Another alternative suggested during the NOP process was one based on the low end of the SCAG forecast for LAX, below 82.9 MAP. However, the SCAG 2016–2040 RTP/SCS forecasts states air passenger demand within the SCAG region will increase from 91.2 million annual passengers in 2014 to 136.2 million annual passengers by year 2040; representing a 1.6 percent annual growth rate. For the purposes of this Project EIR, impact analyses were based on current FAA forecasts, which are largely consistent with SCAG forecasts. See growth inducement section of Chapter 6, *Other Environmental Considerations*.

.In terms of future operations, future passenger activity was based on the FAA Terminal Area Forecast, largely consistent with SCAG projections. LAWA has analyzed future traffic conditions with these future passenger activity levels along with SCAG projected growth in population and employment for the area. Due to federal grant obligations and federal law, LAWA does not have the authority without FAA approval to restrict airline operations or force airlines to operate at other airports, which FAA has not granted any airport since 1990.[3] Similarly, LAWA cannot make changes to the Airport that would restrict its capacity or affect access without approval from the FAA.[4] For these reasons, the constrained growth alternative was deemed infeasible and eliminated from further analysis.

5.4.1.1.5 Terminal 8 APM Station Alternative

The Terminal 8 APM Station Alternative was suggested during the NOP process; it provides for an additional APM station at Terminal 8. The Project currently provides for access to Terminal 8 via an approximately 25-foot-wide single-level pedestrian walkway, which would connect the East CTA APM Station Terminals 1, 7, and 8. The pedestrian walkways would bridge above World Way and connect to Terminals 1, 7, and 8 with elevator and escalator access to both the arrival and departure levels.

Table 5-3 provides detail on the lengths of the proposed passenger walkways and moving walkways, as well as total walk time, for the East CTA APM Station. The locations and lengths of pedestrian and moving walkways are subject to change during the design process.

Table 5-3: East CTA APM Station Passenger Walkway Details

APM STATION	TERMINAL CONNECTION	ASSISTED WALK DISTANCE (FT.)	UNASSISTED WALK DISTANCE (FT.)	TOTAL WALK DISTANCE (FT.)	TOTAL WALK TIME (MIN) 1/
East CTA Station	Terminal 1	220	485	705	3.6
East CTA Station	Terminal 7/8	240	470	710	3.6

NOTE:

1/ Using the lengths of moving walkways and lengths of unassisted paths between the station and terminal vertical circulation cores, the total time to walk from the station to each vertical circulation core was calculated. Calculations were based on a moving walkway speed of 366.7 feet per minute, an unassisted walk speed of 246.7 feet per minute, and 1-minute per vertical transfer.

SOURCE: MapLAX, *Technical Memorandum, Walk Times + Distances from APM CTA Stations to Terminal Vertical Cores*, August 29, 2016.

PREPARED BY: Ricondo & Associates, Inc., September 2016.

As demonstrated in Table 5-3, the proposed alignment of the APM would provide for walkways between the East CTA APM station and Terminal 1 and Terminals 7 and 8, with an estimated distance of 220 feet and 240 feet, respectively, and walk time of 3.6 minutes. Providing an additional APM station between Terminal 7 and 8, would require a scissors alignment, which would increase impacts on the Theme Building and 1961 ATCT, increase Project costs due to construction of additional guideway and an additional station, and increase commute time from the CONRAC and ITFs for all passengers; the increased commute time means this

[3] *See* Airport Noise and Capacity Act of 1990, 49 U.S.C. §§ 47521-33; 14 C.F.R. Part 161. *See also*, 49 U.S.C. § 47101(a)(1) (airport to be made available for public use).

[4] See 49 U.S.C. § 47107(a)(16).

alternative would not achieve the project objectives as well as the proposed Project. For these reasons, and because this alternative would not avoid or substantially lessen significant impacts, the Additional Terminal 8 APM Station Alternative was not carried forward for further analysis.

5.4.1.1.6 Multi-Level CONRAC Alternative

A multi-level CONRAC alternative was identified during the NOP process; it consists of an eight-level CONRAC facility with a corresponding reduced building footprint.

The main components of the CONRAC facility include the Customer Service Building (CSB), Rental Car Ready/Return Parking Area, Quick Turnaround Area (QTA), QTA Support and Additional Site Functions, and Idle Storage. These components are arranged for passenger convenience and accessibility to the APM and the CSB.

The multi-level CONRAC alternative would reduce the length and width of the building, by adding vertical levels to the facility. Additional levels proposed by this alternative would increase passenger driving and turnaround time, hinder ready access to the CSB, and negatively impact overall user/passenger convenience. The proposed CONRAC facility has been designed to allow each existing rental car company (consisting of three main companies that have multiple brands) to consolidate all operations on their own level. Splitting these operations amongst different levels would be operationally challenging and inefficient. Additionally, adding more levels to the CONRAC would be more expensive, and would not avoid or substantially lessen the proposed Project's significant impacts. For these reasons, the Multi-level CONRAC alternative was not carried forward for further analysis.

5.4.1.1.7 Subterranean Parking – No CONRAC Alternative

The Subterranean Parking – No CONRAC Alternative was identified during the NOP process; it proposes a subterranean parking structure in the Manchester Square area. While this alternative would provide for additional parking in the Project area, it would not consolidate rental car companies in one location and would not eliminate rental car shuttle traffic in the CTA.

The CONRAC, as proposed, meets one of the Projects main objectives to provide for provide easier and more efficient access to rental cars, thereby increasing passenger convenience, and conforms with the LAX Plan and the Specific Plan. This alternative would not meet that fundamental project objective. Further, due to cost, the Subterranean Parking – No CONRAC Alternative is not feasible, and was not carried forward for further analysis.

5.4.1.2 Construction Phasing Alternative

The Construction Phasing Alternative is an integrated alternative; however, construction of various components of the Project would be completed at different intervals and phasing would be extended with completion of the proposed Project in 2040. The goal of the Construction Phasing Alternative was to reduce short-term construction emissions and traffic impacts. All roadway improvements not essential for servicing each facility would be implemented during a later phase of construction. Under the Construction Phasing Alternative, construction of the proposed Project would occur in five separate phases.

The delayed phasing and construction approach was initially considered with regard to short-term air quality and transportation impacts associated with the LAX Landside Access Modernization Program. While this alternative would reduce daily emissions and the daily construction-related trip generation, it would increase the overall duration of air pollutant emissions and construction traffic on local roadways. In order to reduce construction emissions to a less than significant level, the phasing of the Project would be greatly extended, increasing costs, delaying Project benefits, and would not avoid or substantially lessen the proposed Project's significant impacts. Therefore, this alternative was determined to be infeasible and was not carried forward for full evaluation.

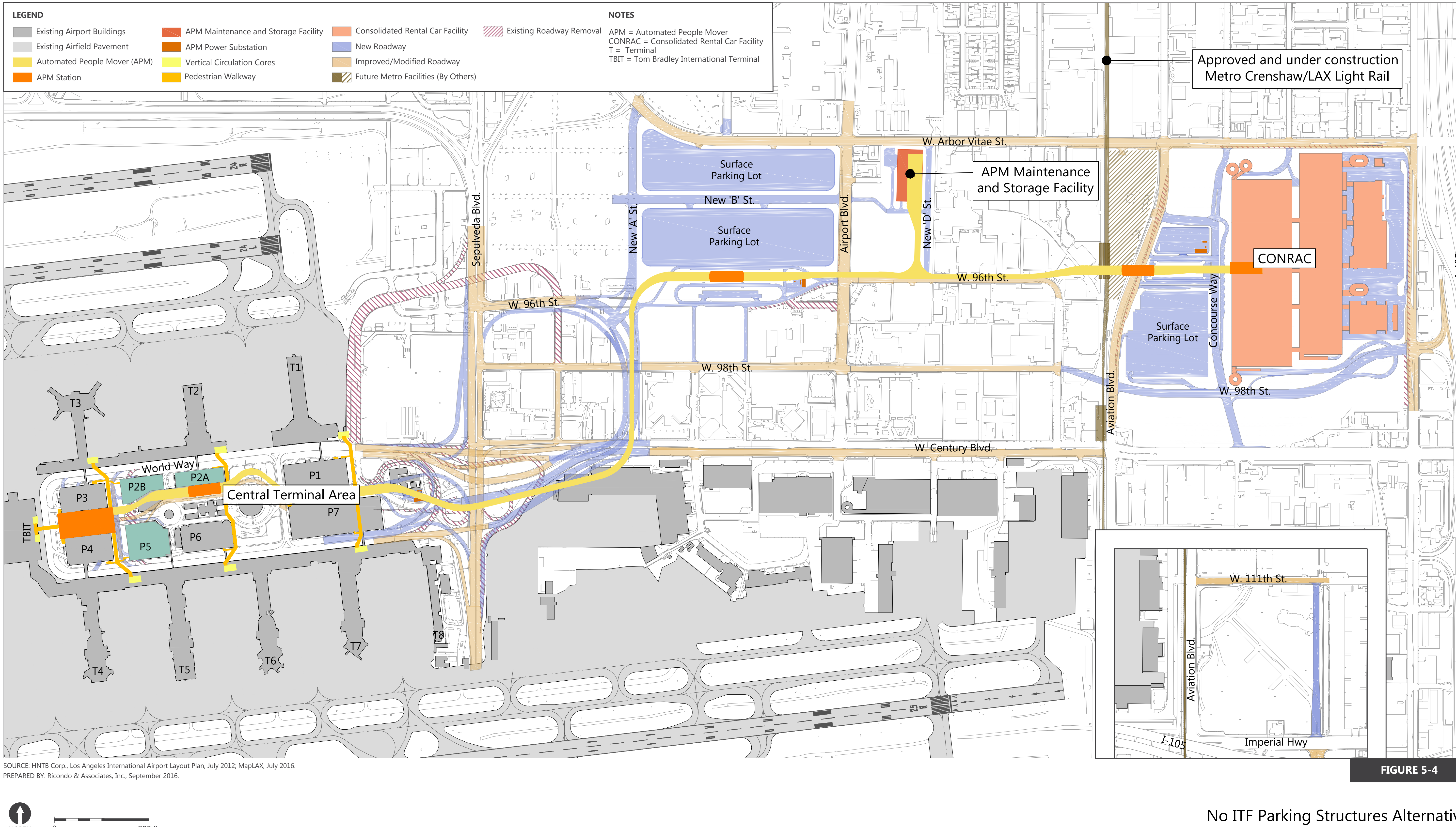
5.4.1.3 No ITF Parking Structures Alternative

The No ITF Parking Structures Alternative would eliminate the multi-level interconnected public parking structures at both the ITF West and the ITF East. As shown on **Figure 5-4**, this alternative would still include the construction of the APM stations and direct internal roadway access to the APM stations. Under this alternative, the proposed site for the ITF West would remain in its current state as a surface parking lot, primarily referred to as Lot C. The 25-acre lot adjacent to Lot C, currently occupied by Avis Rent a Car, would be converted to surface parking. Additionally, the area at the ITF East would become a paved surface parking lot. This alternative would allow for 4,600 parking spaces, 13,000 fewer than the 17,600 spaces provided by the proposed Project. The No ITF Parking Structures Alternative would result in an increase in off-airport parking needs, and as such, private companies would continue to develop land for private, remote public parking facilities, similar to the No Project Alternative. Elimination of the multi-level parking garages would not avoid or substantially lessen the significant impacts of the proposed Project, nor would such an alternative meet the basic objectives of the proposed Project to relieve congestion on Airport and surrounding roadways. For those reasons, this alternative is not evaluated in detail in this Draft EIR.

5.4.2 ALTERNATIVES CARRIED FORWARD FOR FURTHER CONSIDERATION

The following alternatives have been identified for consideration:

1. No Project Alternative – 2024 and 2030/2035
2. No APM Alternative
3. Reduced Phase 1 Improvements Alternative
4. One ITF Parking Structure Alternative
5. Increased Transportation Demand Management Program Alternative
6. Reduced Future Related Development Alternative



SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 5-4

No ITF Parking Structures Alternative

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5.4.2.1 Alternative 1, No Project Alternative

Under the "No Project" alternative, none of the improvements and activities proposed for the LAX Landside Access Modernization Program would occur and the proposed plan amendments included in the Project (see Section 2.8) would not be implemented. The proposed Project areas would continue to be used for airport parking, existing roadways, existing private development, and other various uses at the site. Private parking operators would likely expand operations in order to capitalize on the expected growth in air passengers at LAX that would occur irrespective of the proposed Project. Rental car facilities would also expand based on the projected passenger growth, which would be the same as under the proposed Project. Descriptions of reasonably foreseeable LAX development in 2024 and 2035 under the No Project Alternative are provided below. These improvements would reasonably be expected to occur in the foreseeable future if the proposed Project were not approved, based on current plans. (See State CEQA Guidelines Section 15126.6(e)(3)(C).)

5.4.2.1.1 No Project Alternative (2024)

LAWA also has plans for several airfield, terminal, and miscellaneous improvements at LAX to be completed by 2024. CEQA review of several of the improvements listed below has already been completed. Remaining improvements would undergo CEQA review prior to implementation. These improvements are outlined below and shown on **Figure 5-5**.

Airfield Improvements

LAWA has a number of near term airfield improvements planned in order to improve operations on the airfield by adding new taxiways, increasing runway safety areas, and replacing aging airfield pavement:

- **Runway 6R-24L Runway Safety Area (RSA) Improvements.** In accordance with Public Law 109-115, RSA improvements would be completed on Runway 6R-24L to meet current FAA airport design standards. These improvements include shifting the existing runway approximately 800 feet to the east, realignment of taxiways, relocating navigational aids outside of the RSA, and other related projects.
- **Runway 7L-25R RSA Improvements.** RSA Improvements to Runway 7L-25R would include an 832-foot runway extension to the west, realignment of taxiways, and pavement reconstruction. This project would also include relocating navigational aids outside of the RSA and other related projects.
- **Taxiway C14.** As part of the Midfield Satellite Concourse (MSC) facility, a new north-south ADG VI taxiway would be constructed to connect the north and south airfields. Taxiway C14 would be designed to be 82 feet wide by approximately 3,600 feet long to provide connections to existing Taxiway B, Taxilane C, and Taxiway E.
- **North Airfield Improvements.** 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.

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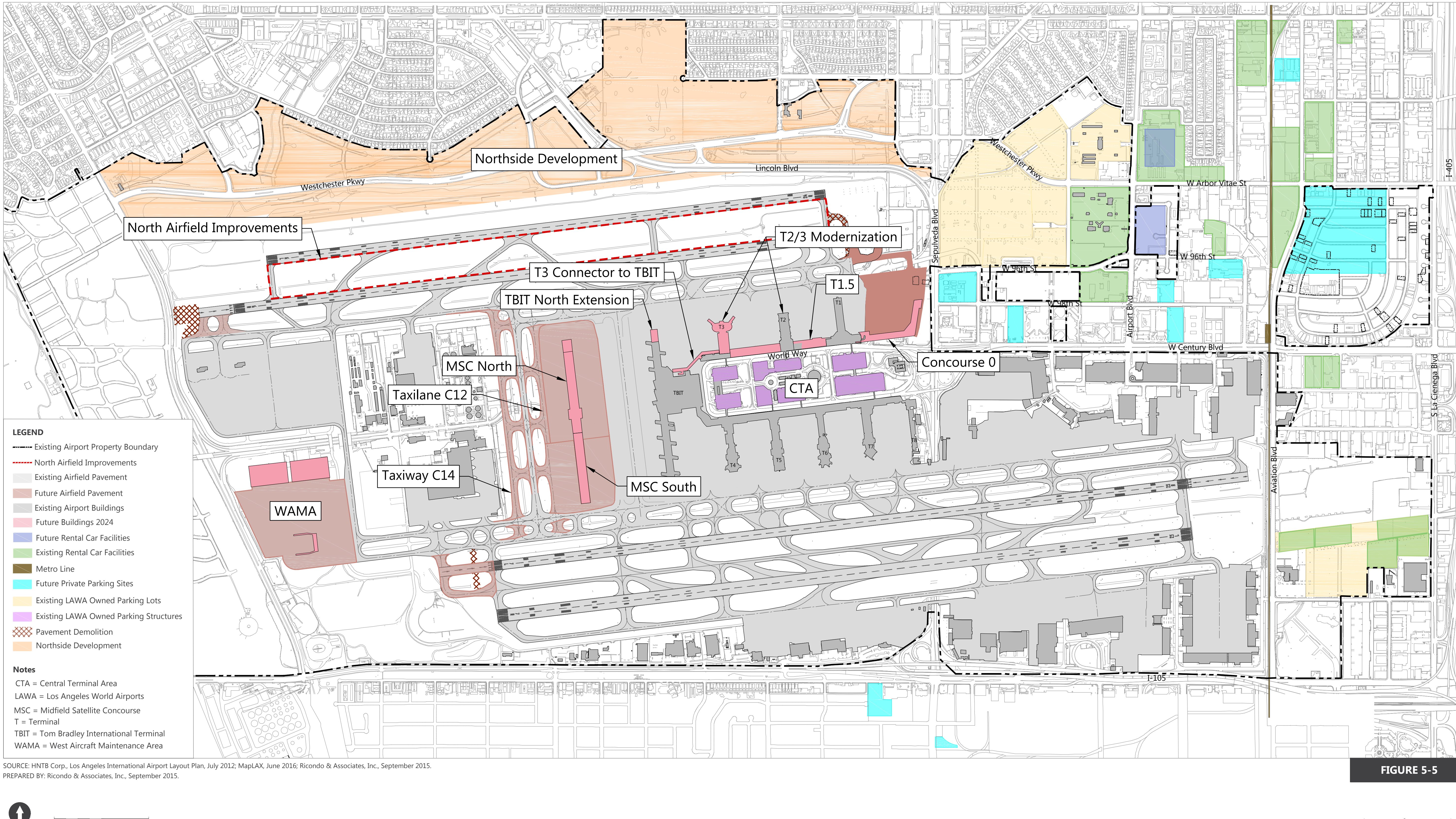

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, June 2016; Ricondo & Associates, Inc., September 2015.
PREPARED BY: Ricondo & Associates, Inc., September 2015.

FIGURE 5-5

No Project Alternative

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Terminal Improvements

Several terminal improvements are planned to be completed by 2024, including the construction of new facilities as well as upgrades to existing terminals.

- **Concourse 0.** 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.
- **Midfield Satellite Concourse (MSC) North Project.** The MSC North would be a new multi-level concourse to the west of the existing Tom Bradley International Terminal (TBIT). This facility would provide up to 800,000 square feet of floor space, including 12 aircraft gates to serve both domestic and international flights. The MSC North Project includes associated apron areas, a taxilane, and provisions for an underground APM tunnel.
- **MSC South.** 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.
- **South Terminal Improvements.** Major interior improvements and building system upgrades within the South Terminal complex, particularly Terminal 5 (Delta Air Lines) and Terminals 6-8 (United Airlines).
- **Terminal 1 Improvements.** Major interior improvements and building system upgrades to Terminal 1, including addition of floor space and reconfiguration of gates (Southwest Airlines).
- **Terminal 1.5.** Terminal 1.5 would be constructed between existing Terminal 1 and Terminal 2 to provide additional passenger processing facilities for the north passenger terminals.
- **Terminal 2 Improvements.** Major interior improvements and building system upgrades to Terminal 2.
- **Terminal 2 and 3 Modernization.** Improvements to Terminals 2 and 3, consisting of upgrading the Terminal 2 concourse, including construction of additional floor area; the demolition and reconstruction of the Terminal 3 concourse building to provide additional concourse area, including a new operation control center; the demolition of the southern appendages of the Terminal 3 satellite; the demolition and reconstruction of the passenger and baggage processing facilities (ticketing buildings) at Terminals 2 and 3, including new facilities for passenger and baggage screening, ticketing, and baggage claim; and a secure connector between Terminals 2 and 3.
- **Terminal 3 Connector to TBIT.** The Terminal 3 connector would provide a passenger connection between TBIT and Terminal 3 on the north side, similar to the Terminal 4 connector.
- **Terminal 3 Improvements.** Minor interior improvements to implement regulatory upgrades in Terminal 3.

Landside Improvements

Several ground access improvements are reasonably foreseeable if the LAX Landside Access Modernization Program is not implemented.

- **Commercial Vehicle Holding Lot Relocation**. The existing current vehicle holding lot would be relocated to Lot E or to the area known as "Manchester Square."
- **Policy Changes to Bus Operations in the Central Terminal Area (CTA)**. To provide for more efficient operations through the CTA, single-level busing would be implemented. Private parking shuttles would be relegated to the upper level, while hotel shuttles would use the lower level.
- **Parking Garage Reconstruction**. Parking Garages P2B and P5 would be demolished and reconstructed in their existing location.
- **Increased Off-Airport Parking.** Private companies would develop land for private, remote public parking facilities that would result in up to approximately 16,300 new parking spaces by 2024.
- **Rental Car Facility Expansion.** Future demand would require existing rental car sites to expand in order to accommodate growth, requiring up to 21 additional acres of space in 2024. Facility expansion may be developed as garage structures on existing land to accommodate future needs.

Miscellaneous Improvements

LAWA also has planned several miscellaneous proposed projects to be implemented in the near future. These mainly include private development and maintenance operations, as described below.

- **Northside Development.** The Northside Development would transform approximately 340 acres of under-utilized land on the north side of the airport to better serve the local communities of Westchester and Playa del Rey.
- **West Aircraft Maintenance Area.** The West Aircraft Maintenance Area (WAMA) Project would develop approximately 70 acres on the west area of the airfield with taxiways, aircraft parking apron areas, maintenance hangars, employee parking, and ancillary facilities. The first phase of the WAMA Project will be completed in July 2016. The second phase of the WAMA Project (construction of an additional maintenance hangar) would be dictated by market conditions and would likely be completed by 2018.

5.4.2.1.2 No Project Alternative (2030/2035)

This alternative included landside improvements, beyond those identified for the No Project Alternative (2024), that are reasonably foreseeable in the Project area:

Landside Improvements

- **Increased Off-Airport Parking.** Private companies would likely continue to develop land for private, remote public parking facilities. In 2030/2035, up to 11,200 additional private parking spaces would be developed beyond those that were established in 2024.

- **Rental Car Facility Expansion.** Future demand would require existing rental car sites to continue to expand in order to accommodate growth. By 2030/2035, up to 14 additional acres of space may be needed for operations beyond what was assumed to be developed in 2024.

5.4.2.2 Alternative 2, No APM Alternative

The No APM Alternative, Alternative 2, proposes the construction of all Project components with the exception of the APM system, including the guideway, stations, pedestrian walkways, and APM Maintenance and Storage Facility (MSF). Additionally, this alternative would not provide for a direct connection with the proposed Metro AMC 96th Street Transit Station. This alternative is proposed because it would avoid the adverse impacts of APM construction and operation.

Proposed components under this alternative include the ITFs, CONRAC, and roadway improvements, as shown on **Figure 5-6**. Without an APM, busing or shuttles would be provided to facilitate the movement of customers to and from the CONRAC and the CTA. Under this alternative, LAWA would coordinate with various rental car agencies to be housed in the CONRAC to develop a circular shuttle route between the CTA and the CONRAC to minimize congestion. LAWA would also restrict commercial vehicles within the CTA to reduce traffic volumes. Commercial vehicles would likely utilize the ITFs, similar to the proposed Project; however, passengers would use shuttle buses to and from these facilities instead of an APM system.

5.4.2.3 Alternative 3, Reduced Phase 1 Improvements Alternative

Alternative 3, the Reduced Phase 1 Roadway Improvements Alternative, includes all of the improvements and activities proposed for the LAX Landside Access Modernization Program. However, all roadway improvements that are not immediately essential for servicing Phase 1 facilities would be implemented during Phase 2 of project construction. This alternative is proposed because it would delay construction impacts of Phase 1 roadways to Phase 2, thereby reducing construction impacts related to air quality, greenhouse gas emissions, noise, and traffic. Under this alternative, the ITF East and the east garage of the ITF West would be completed in Phase 2 of the Project. Roadway improvements to be completed in Phase 1 under Alternative 3 are listed below. All Phase 1 components proposed under Alternative 3 are shown on **Figure 5-7**. All remaining roadway and facility improvements would be completed in Phase 2 of the proposed Project.

- W. 98th Street four-lane extension from Aviation Boulevard to S. La Cienega Boulevard.
- Widening of S. La Cienega Boulevard to provide three lanes in the southbound direction between W. Arbor Vitae Street and W. Century Boulevard.
- Widening of Aviation Boulevard to three lanes in both directions between the W. 98th Street extension and W. Arbor Vitae Street.
- Four-lane extension of I-105 on- and off- ramps to 111th Street from Imperial Highway (with interim passenger pick-up/drop-off location during Phase 1 construction within Lot E).
- Provision of four-lane New “A” Street between Westchester Parkway and W. Century Boulevard to provide access to the ITF West rotary.

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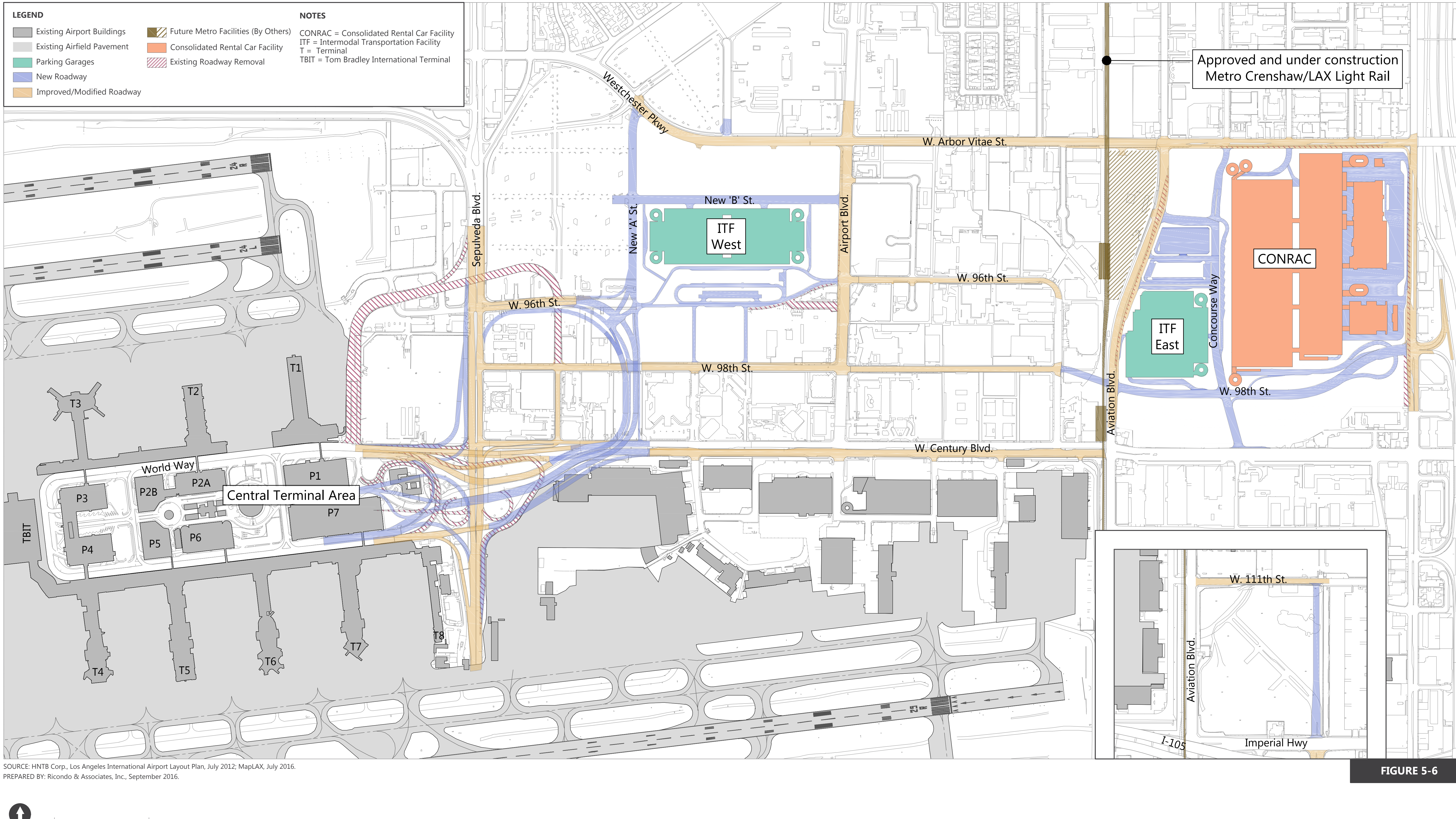

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

FIGURE 5-6

No APM Alternative

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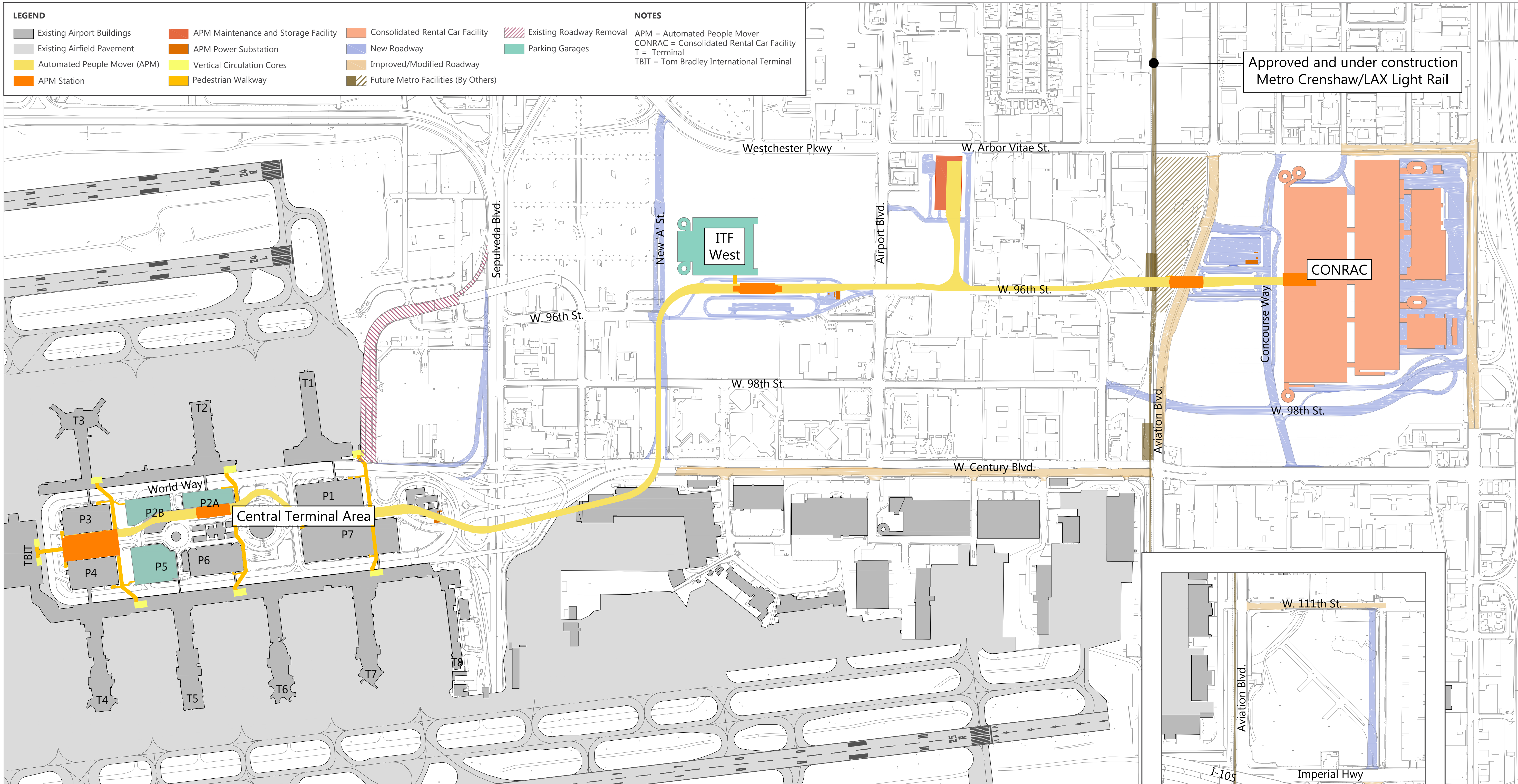

SOURCE: HNTB Corp., Los Angeles International Airport Layout Plan, July 2012; MapLAX, July 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

NORTH 0 800 ft.

FIGURE 5-7

Reduced Phase 1 Improvements Alternative

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- Provision of an additional eastbound lane along W. Arbor Vitae Street from the CONRAC exit to S. La Cienega Boulevard.
- Eastbound W. Century Boulevard widening to five lanes between Avion Drive and Aviation Boulevard.
- Demolition of Sky Way from World Way North to the W. 96th Street Bridge. Access to the W. 96th Street bridge over Sepulveda Boulevard would still be accessible from southbound Sepulveda Boulevard via W. 96th Street west of Sepulveda Boulevard.
- New ramps from southbound Sepulveda Boulevard to both the arrivals and departures levels.
- Provision of a rotary around the ITF West including a vehicular drop-off/pick-up area.
- Concourse Way from W. Century Boulevard to W. Arbor Vitae Street.

5.4.2.4 Alternative 4, One ITF Parking Structure Alternative

As with the proposed Project, secondary roadways within the Manchester Square area would need to be demolished. The majority of the site would still be developed as the CONRAC facility. However, under Alternative 4, the parking structure at the ITF East site would not be constructed, which would reduce construction and operational impacts of this project component.. The area originally intended for the ITF East public parking garage would be a surface parking lot with approximately 1,400 parking spaces, 6,900 fewer than the 8,300 parking spaces provided by the ITF East public parking structure proposed as part of the Project. Even though 8,000 parking spaces would be provided at the ITF West public parking garage, Alternative 4 would still result in an increase in off-Airport parking needs, and as such, private companies would continue to develop land for private, remote public parking facilities.

Alternative 4 assumes the ITF East APM Station would have the same location as in the proposed Project. The station would be elevated above Aviation Boulevard, located approximately 1,000 feet south of W. Arbor Vitae Street and approximately 1,500 feet north of W. Century Boulevard. Much of the APM station's internal configuration would remain the same, yet access to the elevated structure would be provided to/from the proposed surface lot via escalators and elevators.

5.4.2.5 Alternative 5, Increased Transportation Demand Management Program Alternative

Alternative 5 modifies features of Mitigation Measure MM-ST (LAMP)-6 to achieve a greater participation in the TDM program, approximately 20 percent of employees. The 20 percent TDM program focuses on expanding from the 5 percent TDM Program focus on LAX-site employees only (see Section 4.12.2.9.1) to the greater LAX-Gateway Area employee base. The projected LAX-area employees – based upon assumed LAX employee growth over the LAMP horizon years of 2024 and 2035 – are projected to increase to 56,300 employees by the 2024 horizon year, and to over 62,500 employees by the 2035 horizon year.

The current number of employees working within the Gateway to LAX Business Improvement District (Gateway BID) boundaries is just over 14,000 people. A total of 15,500 employees are anticipated in the Gateway BID area by the 2024 horizon year, and a total of 17,500 employees are anticipated in the Gateway BID area by the 2035 horizon year.

LAWA would prepare a LAX TDM Program that includes, but is not limited to the following:

- The formation of a Los Angeles International Airport – Gateway BID Area Transportation Management Organization (TMO) from which to organize and offer alternative transportation programs and benefits to area employees.
- Origin/Destination-based data to organize the following transportation amenities/opportunities for LAX-area employees:
  - Enhanced vanpool program opportunities
  - Enhanced carpool opportunities
  - Transit passes and "first/last mile" transportation for employees residing within two miles of Metro light rail transit stations
  - Employee shuttle program for TMO-based employees that reside within 10 miles of the TMO boundaries, prioritized for employees living within SB 535 designated disadvantaged communities
  - New car-share program opportunities, including "Anytime Mobility" programs to provide either on-site car-share for emergency personal transport or needed employment-related car transport, AND/OR to provide Transportation Network Company (TNC) car service to employees for personal emergency transport or work-related transport needs

The Increased Transportation Demand Management Program Alternative was developed to avoid or substantially lessen the proposed Project's significant impacts related to air quality,, greenhouse gas emissions, and off-airport traffic for future horizon years 2024 and 2035.

5.4.2.6 Alternative 6, Reduced Future Related Development Alternative

The Reduced Potential Future Related Development Alternative, Alternative 6, includes all Project components; however, it provides for less dense potential future related development after completion of construction of the proposed Project in 2035. It is proposed because it would reduce the significant impacts of potential future related development.

The parcels proposed for potential future related development are located adjacent to the CONRAC, ITF East, APM MSF, and ITF West. As with the proposed Project, these parcels would be used for construction laydown and staging areas during construction of the proposed Project, but would be available for future development upon completion of the Project. Development on these parcels would occur sometime beyond 2030 and be completed by independent third-party developers (non-LAWA interests).

While land use designations and design guidelines have been developed to guide future development of these parcels, this Alternative assumes that only half of the potential future related development proposed under the proposed Project would occur (approximately 450,000 sq. ft. total of commercial development rather than the 900,000 sf. ft. total assumed as part of the proposed Project). Alternative 6 assumes approximately 225,000 sq. ft. of commercial development on parcels adjacent to the CONRAC area and approximately 225,000 sq. ft. of commercial development on parcels adjacent to the ITF West and the APM MSF.

As with the proposed Project, Alternative 6 would provide for the opportunity for the following types of commercial space: office space, hotels, restaurants, clothing stores, conference center, theaters, fitness centers, layover facilities, and more. Space allotments by use are shown in **Table 5-4**.

Table 5-4: Reduced Potential Future Related Development Uses

POTENTIAL USE	APPROXIMATE SIZE (SQ. FT.)
Office Space	100,000
Hotel (approximately 200 rooms)	150,000
Commercial Space	100,000
Conference Center	100,000
Total:	**450,000**

SOURCE: Meridian Consultants, July 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

5.5 Evaluation of Alternatives

The following describes the environmental impacts associated with each of the alternatives described in Section 5.4.2 above as compared to significant impacts of the proposed LAX Landside Access Modernization Program Project and potential future related development.

5.5.1 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM PROJECT

The discussion below identifies environmental impacts of each resource category as they relate to the Project alternatives. Unless specifically stated below, impacts are discussed collectively for horizon years of both 2024 and 2035.

5.5.1.1 Alternative 1, No Project Alternative

5.5.1.1.1 Aesthetics

Visual Character

As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a significant and unavoidable visual impact, including aesthetics and visual character, to the Theme Building as a result of the APM Guideway. As the No Project Alternative entirely omits the proposed APM, this alternative would avoid the significant impact that would occur under the proposed Project with respect to aesthetics and visual resources. Impacts would be less than significant.

Shading

As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading. Because the No Project Alternative does not include facilities of a height or mass of the CONRAC, APM Guideway or the multi-level ITFs, this alternative would have less shading impact than the proposed Project and impacts would be less than significant.

Light and Glare

As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare. Because the No Project Alternative does not include facilities of a scale of the CONRAC, APM Guideway or the multi-level ITFs, this alternative would have less light and glare impact than the proposed Project and impacts would be less than significant.

5.5.1.1.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants associated with construction-related activities with a significant and unavoidable impact with respect to regional emissions of VOC, and NO_X, and to local concentrations of PM_{10}. The No Project Alternative would not involve construction; therefore, it would have no net increase in short-term and temporary emissions of criteria air pollutants.

Operational emissions under the No Project Alternative would be higher than under the proposed Project due to increased vehicle miles traveled. The traffic increase under the No Project Alternative relative to the proposed Project is caused by the reduced level of non-road mobility elements that are associated with the APM and CONRAC. Therefore, operational impacts to both regional emissions and local concentrations would be higher under the No Project Alternative than under the proposed Project.

Nonetheless, as the No Project Alternative would not involve any construction, it would not have the significant unavoidable impact that would occur under the proposed Project with respect to construction-related PM_{10}, VOC, NO_2 and NO_X emissions. With respect to operational emissions, the No Project Alternative would result in increased regional emissions, and would increase local concentrations impacts above the levels found to be significant for PM_{10} under the proposed Project (see Section 4.2.1.8.1). Therefore, this alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to operational air quality emissions.

Human Health

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed; therefore, this alternative would not result in any increase in contaminants associated with construction activities. However, operational TAC emissions under the No Project Alternative would be higher than under the proposed Project due to increased vehicle miles traveled. The traffic increase relative to the proposed Project is caused by the reduced level of non-road mobility elements that are associated with the APM and CONRAC. Therefore, operational health risk impacts would be higher under the No Project Alternative than under the proposed Project.

Nonetheless, as the No Project Alternative would not involve any construction, it would not have the increased risks that would occur under the proposed Project with respect to construction-related TAC emissions. With respect to operational emissions, the No Project Alternative would result in increased TAC emissions, and would potentially increase risks due to this additional exposure above the levels found under the proposed Project (see Sections 4.2.2.4.1 and 4.2.2.7). As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities. However, incorporation of mitigation would result in less than significant impacts. It is expected that due to the elimination of health risk associated with construction activities, impacts under the No Project Alternative would be less than significant.

5.5.1.1.3 Biological Resources

Under the No Project Alternative, it is expected that private parking operators would expand operations in order to capitalize on the expected growth in air passengers at LAX that would occur irrespective of the proposed Project. Rental car facilities are also expected to expand based on the projected passenger growth. Therefore, the No Project Alternative would result in removal of trees and other ornamental vegetation for construction of new development. Under the No Project Alternative, the existing ruderal and ornamental vegetation on the Project site would continue to grow, and the disturbed/developed land would largely remain the same or be redeveloped for parking or rental car facilities. Similar to the proposed Project, on-site native and nonnative trees and other ornamental vegetation could harbor raptor and other native bird nests and disturbing or destroying active bird nests is a violation of the Migratory Bird Treaty Act (MBTA). As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Given the more limited development under the No Project Alternative, this alternative would have less impact than the proposed Project. The No Project Alternative would have a less than significant impact to trees, raptors and nesting birds and eggs with the incorporation of similar standard control measures.

5.5.1.1.4 Cultural Resources

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a significant and unavoidable visual impact to the Theme Building as a result of the APM Guideway. As the No Project Alternative entirely omits the proposed APM, this alternative would avoid the significant impact that would occur under the proposed Project with respect to historic resources.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation. Given the more limited development and associated area of ground disturbance under the No Project Alternative, this alternative would have less impact than the proposed Project on archaeological resources, paleontological resources, and human remains. The No Project Alternative would have a less than significant impact to cultural resources with the incorporation of similar standard control measures.

5.5.1.1.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project would be less than either the Future Without Project scenarios in 2024 and 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with the incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. As the GHG emissions from the No Project Alternative would be greater than those under the proposed Project, impacts would be significant. The No Project Alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

5.5.1.1.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth. The demolition of buildings that have potential to contain asbestos-containing materials (ACMs) or lead-based paint (LBP) would still occur. Major excavation activities that would have the potential to encounter contaminated soils or groundwater would probably not occur. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As the No Project Alternative avoids construction of any of the proposed Project components, demolition or excavation activities would be limited to the removal of the remaining residential uses in Belford and Manchester Square under LAWA's Aircraft Noise Mitigation Program (ANMP) and for the construction of parking and rental car facilities. Therefore, this alternative would have less impact than the proposed Project and impacts would be less than significant.

Exposure of Workers to Hazardous Materials

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth. Major excavation activities that would have the potential to encounter contaminated soils or groundwater would probably not occur. As such, the No Project Alternative would not expose construction workers to contaminated materials. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As the No Project Alternative avoids construction of any of the proposed Project components, demolition or excavation activities would be limited to the removal of the remaining residential uses in Belford and Manchester Square under LAWA's ANMP and for the construction of parking and rental car facilities. Therefore, this alternative would have less impact than the proposed Project and impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth. As such, there may be a slight increase in volume in the use and storage of hazardous materials on the Project site. However, LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of these facilities, as well as the various airfield, terminal, landside, and miscellaneous improvements. Additionally, LAWA would still utilize the Manchester Square site for other landside improvements, including the relocation of the existing commercial vehicle holding lot. The acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be required. As such, the implementation of these improvements would not occur until the two existing schools are relocated. No other schools are located or proposed within one-quarter mile of the Project site. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. Due to the landside improvements to be constructed in Manchester Square, the No Project Alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth, which may be located on portions of the Project site. There would not be a substantial increase in volume in the use and storage of hazardous materials associated with proposed Project components, but there may be a slight increase in volume in the use and storage of hazardous materials on the Project site. Additionally, construction of the various improvements may interfere with known cleanup sites undergoing remediation. LAWA would ensure that the implementation of these improvements would not interfere with existing remediation efforts. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same standard control measures into the No Project Alternative, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth, but would not significantly alter ground access across the Project site. Access to hospitals, emergency response centers, school locations, communication facilities, highways and bridges, or airports would not change under the No Project Alternative. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and could degrade response times for emergency personnel over time. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant construction-related impact with incorporation of mitigation and a standard control measure. However, as increased emergency response times would be an operational impact under the No Project Alternative, this alternative would have greater impact on safety hazards than the proposed Project. Without additional mitigation measures, impacts could be significant.

5.5.1.1.7 Hydrology, Water Quality, and Groundwater

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth, which may be located on portions of the Project site. Construction activities under this alternative would be reduced compared to the proposed Project. As with the proposed Project, construction activities for the No Project Alternative would involve temporary surface water runoff and water quality impacts. Adherence to the Stormwater Pollution Prevention Plan (SWPPP) and implementation of standard best management practices (BMPs) during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Existing stormwater flows across the Project site would continue to occur. The existing hydrologic and drainage patterns would change based on new private parking and rental car facilities, but would not be substantially different than that under the proposed Project. Similar to the proposed Project, the No Project Alternative would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. As the No Project Alternative would entail construction of new off-Airport parking areas and rental car facilities, this alternative would have a similar, although reduced, impact on hydrology as the proposed Project with incorporation of similar mitigation measures. As such, the No Project Alternative would have similar, although reduced, impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.1.1.8 Land Use and Planning

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed. While the existing incompatible uses at Manchester Square and Belford would still be acquired and removed as part of an ongoing acquisition and relocation program, the proposed uses under the proposed Project would not be implemented. Under the No Project Alternative, plan amendments that are proposed under the Project would not occur. The existing LAX Plan specifically outlines the creation of a CONRAC and focused ground transportation facilities, which would not occur under the No Project Alternative. Additionally, the recently adopted 2016-2040 RTP/SCS identifies the proposed APM, ITFs, and CONRAC as ground access improvements at LAX that would support SCAG's regional planning policies and major initiative to improve airport access. As discussed in Section 4.8, *Land Use and Planning*, the proposed Project would have a less than significant impact related to land use and planning. However, as the No Project Alternative would not include the proposed Project components, including elements outlined in the

LAX Plan and identified in the 2016-2040 RTP/SCS, this alternative would be inconsistent with the LAX Plan and would conflict with SCAG's regional planning goals and policies. Additionally, the No Project Alternative would include the construction of additional off-Airport parking facilities and rental car facilities rather than a CONRAC, which would be inconsistent with the goals of the LAX Plan, LAX Specific Plan, and the 2016-2040 RTP/SCS. Thus, land use and planning impacts would be significant.

5.5.1.1.9 Noise

Road Traffic Noise

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed. Without improvements to the roadway network, on-Airport traffic conditions would deteriorate in both horizon years 2024 and 2035. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed Project would have a less than significant impact. However, as the level of service of on-Airport and off-Airport traffic would be reduced, it is expected that this alternative would have greater impacts than the proposed Project. However, roadway traffic under the No Project Alternative would not be likely to cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase and road traffic noise impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Under the No Project Alternative, expansion of private parking operators and rental car facilities would occur, which may be located on portions of the Project site. Construction traffic and equipment noise and vibration associated with any new private parking and rental car facilities could result in impacts to noise- and vibration-sensitive uses. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts under the proposed Project would be less than significant. Compared to the proposed Project, the No Project Alternative would have reduced construction traffic noise and construction equipment vibration impacts; impacts would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. With the adoption of similar mitigation, construction equipment noise associated with the No Project Alternative would be less than significant.

Transit Noise and Vibration

Under the No Project Alternative, there would be no construction or operations of a transit system (i.e., the APM). As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact. As no transit system would be constructed under the No Project Alternative, there would be no transit noise and vibration impacts under this alternative.

5.5.1.1.10 Population and Housing

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed. Similar to the proposed Project, this alternative would not include residential development; However, LAWA would still utilize the Manchester Square area for other landside improvements, including the relocation of the existing commercial vehicle holding lot. As such, remaining dwelling units in Manchester Square would be acquired as part of the existing ANMP.

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth, which may be located on portions of the Project site. While these facilities would generate some employment growth, it would not be inconsistent with adopted growth forecasts or policies. While several airport improvements would occur, these improvements would not generate a substantial increase in employment. All LAWA construction projects would comply with LAWA's existing Project Labor Agreement (PLA), which requires maximizing employment of qualified local persons residing within the local Los Angeles area. Additionally, the increase in off-Airport public parking facilities and rental car sites under this alternative would not generate a substantial increase in employment. Any employees for this projected development would likely commute from the local Los Angeles area.

As discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact. Given the more limited development under the No Project Alternative, this alternative would have less impact on population and housing than the proposed Project. The No Project Alternative would have a less than significant impact on population and housing.

5.5.1.1.11 Public Services

Fire Protection

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed; therefore, this alternative would not result in an increase of uses that would generate a demand for fire protection services by passengers or employees. The on-site demand for fire protection services would be similar to existing conditions and there would be a slight increased volume in the use and storage of hazardous materials on the Project site from expansion of public parking facilities and rental car sites. As such, the No Project Alternative would not place additional capacity constraints on the Los Angeles Fire Department (LAFD) Fire Station 95, the HazMat responder within the Project area. Although several airfield, terminal, landside, and miscellaneous improvements would occur under the No Project Alternative, construction and operation of these developments would not result in changes to the need for fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and would subsequently affect LAFD's emergency response activities. As discussed in Section 4.11.1, *Fire Protection*, the proposed Project would have a less than significant construction-related impact with incorporation of mitigation and a standard control measure. However, as emergency response would be an operational impact under the No Project Alternative, this alternative would have greater impact on fire protection than the proposed Project. Impacts could be significant without incorporation of mitigation.

Law Enforcement

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed; therefore, this alternative would not result in a substantial increase of uses that would generate a demand for law enforcement services by passengers or employees. The on-site demand for law enforcement services would be similar to existing conditions and there would be no substantial increase in occupied area requiring security and enforcement surveillance by Los Angeles World Airports Police Department (LAWAPD). Although several proposed airfield, terminal, landside, and miscellaneous improvements would occur under the No Project Alternative, construction and operation of these developments would not result in changes to the need for police officers or equipment, demand, or emergency access. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and would subsequently affect LAWAPD's emergency response activities. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant construction-related impact with incorporation of mitigation and a standard control measure. However, as emergency response would be an operational impact under the No Project Alternative, this alternative would have greater impact on law enforcement than the proposed Project. Impacts could be significant without the incorporation of mitigation measures.

Schools

Similar to the proposed Project, the No Project Alternative would not include residential development and would therefore not have a direct impact on student generation or demand for school services. Under this alternative, LAWA would still utilize the Manchester Square site for other landside improvements, including the relocation of the existing commercial vehicle holding lot. As such, the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be acquired, resulting in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. The LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, the No Project Alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools.

5.5.1.1.12 Transportation / Traffic

On-Airport Traffic

The No Project Alternative would not involve any of the construction activities associated with the development of the proposed Project, including roadway improvements. Therefore, the physical roadway network would be consistent with existing conditions. Without improvements to the roadway network, on-

Airport traffic conditions would deteriorate in both horizon years 2024 and 2035. Key intersections and roadway links within the CTA were analyzed for the No Project Alternative.

Future Horizon Year 2024

Under the No Project Alternative for 2024 conditions, three on-Airport intersections would operate at one level of service below conditions under the proposed Project, as shown in **Table 5-5**. Specifically, the intersection of World Way South and Center Way (Exit) is projected to operate at LOS E; and the intersections of World Way South and West Way and World Way North and Sky Way (Lower Level) are projected to operate at LOS C. Additionally, the majority of departure-level and arrival-level roadway links within the CTA would operate at a reduced LOS under the No Project Alternative as compared to the proposed Project. The number of roadway links operating at each LOS for the No Project Alternative and the proposed Project is shown in Table 5-5. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Table 5-5: No Project Alternative On-Airport Traffic Impacts (2024)

	INTERSECTIONS		ROADWAY LINKS	
LEVEL OF SERVICE	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT
A	1	2	7	13
B	2	1	-	2
C	2	-	-	1
D	-	1	1	5
E	1	-	-	2
F	-	-	16	1
Total	6	4	24	24

NOTE: Two CTA intersections would be removed under the proposed Project.

SOURCE: Ricondo & Associates, Inc, May 2016.

PREPARED BY: Ricondo & Associates, Inc., August 2016.

Future Horizon Year 2035

Under the No Project Alternative for 2035 conditions, two on-Airport intersections would operate at one level of service below conditions under the proposed Project and one intersection would operate at two levels of service below conditions under the proposed Project, as shown in **Table 5-6**. Specifically, the intersection of World Way South and Center Way (Exit) is projected to operate at LOS E; the intersection of World Way South and West Way is projected to operate at LOS D; and the intersections of World Way North and Sky Way (both Upper Level and Lower Level) and World Way South and East Way are projected to operate at LOS C. The number of roadway links operating at each LOS for the No Project Alternative and the proposed Project is shown in Table 5-6. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Table 5-6: No Project Alternative On-Airport Traffic Impacts (2035)

	INTERSECTIONS		ROADWAY LINKS	
LEVEL OF SERVICE	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT
A	1	1	7	12
B	-	1	-	1
C	3	2	-	3
D	1	-	1	-
E	1	-	-	1
F	-	-	16	7
Total	6	4	24	24

NOTE: Two CTA intersections would be removed under the proposed Project.

SOURCE: Ricondo & Associates, Inc., May 2016.
PREPARED BY: Ricondo & Associates, Inc., August 2016.

Off-Airport Traffic

The No Project Alternative would not involve any of the construction activities associated with the development of the proposed Project, including roadway improvements. Therefore, the physical roadway network would generally be consistent with existing conditions. However, six intersections would be improved independent of the proposed Project. These improvements were considered in analyzing impacts of the No Project Alternative. All intersections studied under the proposed Project were also analyzed for the No Project Alternative.

As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a less than significant impact with incorporation of mitigation.

Future Horizon Year 2024

Under the 2024 No Project Alternative, traffic in the study area would increase and result in a lower level of service at several key intersections, as shown in **Table 5-7**. Specifically, as compared to the proposed Project, the level of service at 10 intersections would be reduced in the a.m. peak hour; 9 intersections in the midday peak hour; and 18 intersections in the p.m. peak hour. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Table 5-7: No Project Alternative Off-Airport Traffic Impacts (2024)

	AM PEAK HOUR		MIDDAY PEAK HOUR 1/		PM PEAK HOUR	
LEVEL OF SERVICE	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT
A	30	30	8	10	25	26
B	29	33	18	13	21	24
C	37	35	4	8	33	30
D	46	43	3	2	38	42
E	27	28	2	3	35	30
F	14	14	1	0	31	31
Total	183	183	36	36	183	183

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Future Horizon Year 2035

Under the 2035 No Project Alternative, traffic in the study area would increase and result in a lower level of service at several key intersections, as shown in **Table 5-8**. Specifically, as compared to the proposed Project, the level of service at 8 intersections would be reduced in the a.m. peak hour; 8 intersections in the midday peak hour; and 18 intersections in the p.m. peak hour. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Table 5-8: No Project Alternative Off-Airport Traffic Impacts (2035)

	AM PEAK HOUR		MIDDAY PEAK HOUR [1/]		PM PEAK HOUR	
LEVEL OF SERVICE	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT	NO PROJECT ALTERNATIVE	PROPOSED PROJECT
A	25	22	7	8	23	23
B	23	26	7	11	11	15
C	33	34	12	7	28	28
D	41	43	6	6	37	34
E	41	36	2	2	39	37
F	20	22	2	2	45	46
Total	183	183	36	36	183	183

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Construction Traffic

The No Project Alternative 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. As discussed in Section 4.12.3, *Construction Surface Transportation*, the proposed Project would have less than significant impacts with the incorporation of mitigation and a standard control measure. Although the No Project Alternative would involve construction of additional off-Airport parking and rental car facilities, the No Project Alternative entirely avoids the proposed Project's construction traffic impacts, which would be greater than the No Project Alternative. Thus, the No Project Alternative would have less impact than the proposed Project with respect to construction traffic. Impacts would be less than significant.

5.5.1.1.13 Utilities and Service Systems and Energy

Energy

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed. The No Project Alternative would involve the construction of additional off-Airport and rental car facilities, but overall construction of these facilities would require less energy requirements than the proposed Project. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact on energy. As energy demand under the No Project Alternative would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Water

Under the No Project Alternative, improvements associated with the proposed Project would not be constructed. The No Project Alternative would involve the construction of additional off-Airport and rental car facilities, but overall construction of these facilities would require less water usage than the proposed Project. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. Under the No Project Alternative, car rental activities, including but not limited to car washing, would still occur at existing and expanded facilities dispersed around the Airport, but water usage for APM train washing would not occur. Therefore, the No Project Alternative would have a less or similar impact on water demand compared to the proposed Project; impacts would be less than significant.

5.5.1.1.14 Relationship to Proposed Project Objectives

The No Project Alternative would not provide for development of a CONRAC, ITFs, an APM or associated facilities, or roadway improvements. 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, the No Project Alternative would not meet any of the proposed Project's objectives listed above under Section 5.3. Specifically, the No Project Alternative would not meet the proposed Project's objective to provide new access options to LAX, including a direct connection to transit and easier and more efficient access to rental cars. The No Project Alternative would not provide for facilities necessary to relieve congestion in the CTA and on the surrounding street system. The No Project Alternative would also not promote the sustainability of LAX by improving efficiency and operations of the surface transportation system, nor would it enhance and integrate new facilities with existing structures, both inside and outside the CTA.

5.5.1.2 Alternative 2, No APM Alternative

5.5.1.2.1 Aesthetics

Visual Character

The No APM Alternative proposes the construction of all Project components with the exception of the APM system, including the guideway, stations, pedestrian walkways, and APM MSFMSF. Construction and operations of the components under the No APM Alternative would result in similar changes to the visual character of the majority of the Project site as compared to the proposed Project. However, massing would be reduced as the APM and associated facilities would not be constructed. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a significant and unavoidable visual impact, including aesthetics and visual character, to the Theme Building as a result of the APM Guideway. As the No APM Alternative entirely omits the proposed APM, this alternative would avoid the significant impact that would occur under the proposed Project with respect to aesthetics and visual resources. Impacts would be less than significant.

Shading

The No APM Alternative would implement all of the proposed Project components except the APM and associated facilities. Similar to the proposed Project, the development of the components under Alternative 2 would have potential to cast shadows on surrounding uses. This alternative would reduce the amount of height and massing on the Project site, which would reduce potential shading impacts in comparison to the proposed Project. However, the shading impacts under the No APM Alternative would be consistent with the existing character of the highly developed area, which contains many sources of shading. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading. The No APM Alternative would have less impact than the proposed Project and impacts would be less than significant.

Light and Glare

The No APM Alternative would implement all of the proposed Project components except the APM and associated facilities. Similar to the proposed Project, the No APM Alternative would incorporate light sources including poles and fixtures, walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. These sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of a modern airport transportation area. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare. While not substantial, the No APM Alternative would slightly reduce the amount of illumination on the Project site in comparison to the proposed Project. Impacts would be less than significant.

5.5.1.2.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants associated with construction-related activities with a significant and unavoidable impact with respect to regional emissions of VOC and NO_X, and to local concentrations of PM_{10}. A substantial portion of these construction emissions are associated with the construction of the APM guideway, stations, pedestrian walkways, and APM MSF. The No APM Alternative entirely omits this portion of the construction; therefore, it would have reduced short-term and temporary emissions of criteria air pollutants as compared to the proposed Project. However, it is expected that construction-related impacts would be significant.

Operational emissions would be higher under the No APM Alternative than under the proposed Project due to increased vehicle miles traveled. The traffic increase relative to the proposed Project is due to the use of shuttles or buses to transport CONRAC, commercial vehicle shuttles, and parking users between the CTA, CONRAC and ITFs, instead of the APM. Therefore, operational impacts to both regional emissions and local concentrations would be higher under the No APM Alternative than under the proposed Project.

Nonetheless, as the No APM Alternative would involve much less construction, this alternative would have lower impacts than would occur under the proposed Project with respect to construction-related PM_{10}, VOC, and NO_X emissions. With respect to operational emissions, the No APM Alternative would result in increased regional emissions, and would potentially increase local concentrations impacts above the levels found to be significant and unavoidable for PM_{10} under the proposed Project. Therefore, operational impacts under the

No APM Alternative would be significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

Human Health

As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. The No APM Alternative would involve less construction; therefore, it would have lower net increases in these contaminants. However, operational TAC emissions would be higher under the No APM Alternative than under the proposed Project due to increased vehicle miles traveled. The traffic increase relative to the proposed Project is due to the use of shuttles or buses to transport CONRAC, parking, and commercial vehicle shuttle users between the CTA, ITFs, and CONRAC, instead of the APM. Therefore, operational health risk impacts would be higher under the No APM Alternative than under the proposed Project.

Nonetheless, as the No APM Alternative would involve less construction, it would have lower increases in risks than would occur under the proposed Project with respect to construction-related TAC emissions. With respect to operational emissions, the No APM Alternative would result in increased TAC emissions, and would potentially increase risks due to this additional exposure above the levels under the proposed Project. However, the major contributor to risks under the proposed Project would be due to construction emissions; therefore, it is likely that human health risks under the No APM Alternative would be less than the proposed Project.

5.5.1.2.3 Biological Resources

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. Construction and operations of the components under the No APM Alternative would result in similar impacts as the Project on street trees and nesting birds within the Project site. As compared to the proposed Project, the No APM Alternative would reduce but not substantially change the number of trees to be removed. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Incorporating the same standard control measures as mitigation measures into the No APM Alternative, this alternative would have similar impacts to the proposed Project with respect to trees, raptors, and nesting birds and eggs. Impacts would be less than significant.

5.5.1.2.4 Cultural Resources

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. The No APM Alternative would not result in the demolition of any historic building, nor would it result in any activity that would damage, destroy, or reduce the integrity or significance of any historic resource. Furthermore, the No APM Alternative would not result in the introduction of new structures that would reduce the level of visual prominence of the Theme Building within the CTA. As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a significant and unavoidable visual impact to the Theme Building as a result of the APM Guideway and pedestrian walkways connecting the APM to the passenger terminals and parking garages. As the No APM Alternative entirely omits the proposed APM, this alternative would avoid the significant impact that would occur under the proposed Project with respect to historic resources. Impacts would be less than significant.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. As compared to the proposed Project, the No APM Alternative would result in less ground disturbance, which would result in reduced potential to impact previously unknown buried archaeological resources, paleontological resources, and human remains. With incorporation of the same standard control measures as mitigation measures into Alternative 2, impacts with respect to archaeological resources, paleontological resources, and human remains would be less than significant.

5.5.1.2.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project would be less than either the Future Without Project scenarios in 2024 and 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. The GHG emissions under the No APM Alternative would be greater than those under the proposed Project due to the increase in traffic volume and associated emissions. The traffic increase under the No APM Alternative relative to the proposed Project is due to the use of shuttles or buses to transport CONRAC users between the CTA and CONRAC, instead of the APM. Therefore, GHG impacts from the No APM Alternative would be significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project..

5.5.1.2.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. Therefore, this alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. The demolition of buildings would have the potential to result in the exposure of ACMs or LBP. Excavation activities would also have the potential to encounter contaminated soils or groundwater from the known hazardous materials sites in the Project area. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As the No APM Alternative slightly reduces the overall amount of construction activities, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Exposure of Workers to Hazardous Materials

The No APM Alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. Excavation activities would have potential to encounter contaminated soils or groundwater would occur. As such, this alternative may result in previously unidentified soil and/or perched groundwater contamination to be encountered construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that that contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As the No APM Alternative slightly reduces the overall amount of construction activities, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

The No APM Alternative would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. This alternative would also introduce uses and activities on the Project site that would increase the use of hazardous materials and emissions. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Similar to the proposed Project, the No APM Alternative would still require acquisition of the existing Stella Middle Charter and Bright Star Secondary Charter Academies on the Manchester Square site. LAWA intends to acquire and relocate these schools prior to the commencement of construction activities. However, if the schools have not been relocated when columns for the APM guideway need to be erected, construction may occur within one-quarter mile of these schools. Construction activities would be limited to the APM columns, which would involve no or limited amounts of acutely hazardous material. Construction contractors would be required to handle, store, and use any hazardous construction materials in accordance with manufacturers' instructions and in compliance with the applicable standards and regulations described in Section 4.6.1.3.

No other schools are located or proposed within one-quarter mile of the Project site. As such, no hazardous emissions or hazardous materials would occur within one-quarter mile of an existing or proposed school. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. As development of Manchester Square would occur under the No APM Alternative, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

The No APM Alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, or the construction of new roadways and various roadway improvements.

There would also be a substantial increase in volume in the use and storage of hazardous materials on the Project site. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of the Project components. However, construction of the various Project components may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same standard control measures into the No APM Alternative, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

The No APM Alternative would introduce new uses and activities and would alter ground access across the Project site. Traffic congestion associated with construction activities could impede the movement of emergency vehicles. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of mitigation similar to that identified for the proposed Project would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes during construction. Additionally, as compared to the proposed Project, there may be an increase in operational traffic congestion associated with shuttle buses operating out of the ITFs and CONRAC. As such, the increased traffic congestion could degrade response times for emergency personnel over time. However, it is expected that under this alternative, emergency response teams would be able to meet its response time requirements, and therefore impacts would be less than significant. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measures into the No APM Alternative, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.1.2.7 Hydrology, Water Quality, and Groundwater

Similar to the proposed Project, the No APM Alternative would require construction of new storm-drain systems, including retention basins used to retain the 10-year design storm. Construction activities under this alternative would be reduced compared to the proposed Project. As with the proposed Project, construction activities under this alternative would involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Similar to the proposed Project, the No APM Alternative would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. Incorporating similar mitigation measures and options for consideration for stormwater management would minimize surface water runoff and reduce degradation of surface water runoff and water quality for the No APM Alternative. As such, the No APM Alternative would have similar, although reduced, impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.1.2.8 Land Use and Planning

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. The existing LAX Plan specifically outlines the creation of an APM system, which would not occur under Alternative 2. Additionally, the recently adopted 2016-2040 RTP/SCS identifies the proposed APM as one of the ground access improvements at LAX that would support SCAG's regional planning policies and major initiative to improve airport access. As discussed in Section 4.8, *Land Use and Planning*, the proposed Project would have a less than significant impact related to land use and planning. However, as the No APM Alternative would not include the APM system, which is an element outlined in the LAX Plan and is identified in the 2016-2040 RTP/SCS, this alternative would be inconsistent with the LAX Plan and would conflict with SCAG's regional planning goals and policies. Thus, land use and planning impacts would be significant.

5.5.1.2.9 Noise

Road Traffic Noise

Under the No APM Alternative, passengers would be transported from the CONRAC and ITFs via shuttle buses instead of an APM system. Although the shuttles would be consolidated, traffic impacts would be greater than under the proposed Project, as discussed in Section 5.5.1.2.12. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed Project would have a less than significant impact. It is expected that the No APM Alternative would result in increased traffic and roadway noise, but the increased traffic would not be proportionately significant. Thus, the No APM Alternative would have similar impacts with respect to road traffic noise. Impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Construction activities for the No APM Alternative would be slightly reduced as compared to the proposed Project as this alternative does not include construction of the APM guideway, stations, or MSF. However, as with the proposed Project, Alternative 2 would include construction of the CONRAC in close proximity to receptors sensitive to noise and vibration from construction traffic and equipment. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts under the proposed Project would be less than significant. Compared to the proposed Project, Alternative 2 would have reduced construction traffic noise and construction equipment vibration impacts; impacts would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. Compared to the proposed Project, Alternative 2 would have similar construction equipment noise impacts, with the exception of the area along the APM alignment for which impacts would not occur. With the adoption of similar mitigation, construction equipment noise associated with Alternative 2 would be less than significant.

Transit Noise and Vibration

Under the No APM Alternative, there would be no construction or operations of a transit system (i.e., the APM system). As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact. As no transit system would be constructed under the No APM Alternative, there would be no transit noise and vibration impacts under this alternative.

5.5.1.2.10 Population and Housing

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. Similar to the proposed Project, this alternative would not include residential development, but would displace the same nominal number of dwelling units to enable construction of the Project components. Construction and operation of the components under the No APM Alternative would result in comparatively less generation of employment than that for the proposed Project, although the employment associated with busing and shuttles circulating customers between the CTA, CONRAC, and ITFs would be similar to existing conditions. Therefore, as with the proposed Project, employment generated under this alternative would be consistent with adopted growth forecasts and policies. As discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact on population and housing. As with the proposed Project, population and housing impacts under the No APM Alternative would be less than significant.

5.5.1.2.11 Public Services

Fire Protection

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. As such, fire protection demand for the No APM Alternative would be slightly reduced as compared to the proposed Project. However, operation of the CONRAC would still occur, which would result in an increased volume of the use and storage of hazardous materials on the Project site. Similar to the proposed Project, the No APM Alternative would place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area, compared to existing conditions. However, the handling and storage of hazardous materials under this alternative would comply with applicable federal, state, and local regulations to ensure spills and releases would not create a hazard to the public or the environment, thus reducing demand on LAFD Fire Station 95.

Under the No APM Alternative, there may be an increase in traffic congestion as compared to the proposed Project due to the consolidated shuttle buses operating out of the ITFs and CONRAC. The increased traffic congestion could delay LAFD's emergency response activities by impeding the movement of emergency vehicles. However, implementation of mitigation similar to that for the proposed Project would address any traffic detours, coordination with LAFD regarding road closures, and the designation of busing and shuttles routes. Additionally, the No APM Alternative would not result in a substantial increase in on-Airport population or land use changes that would require the need for new or expanded facilities, changes to fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. As discussed in Section 4.11.1, *Fire Protection*, the proposed

Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into the No APM Alternative, this alternative would have similar impacts to the proposed Project with respect to fire protection. Impacts would be less than significant.

Law Enforcement

Similar to the proposed Project, the No APM Alternative would result in similar increase of uses that would generate a demand for law enforcement services by passengers and employees. Under this alternative, there may be an increase in traffic congestion as compared to the proposed Project due to the consolidated shuttle buses operating out of the ITFs and CONRAC. Implementation of mitigation similar to that for the proposed Project would address any traffic detours, coordination with LAWAPD regarding road closures, and the designation of busing and shuttles routes. However, similar to the proposed Project, the No APM Alternative could include the placement of a satellite LAWAPD office within proximity to the CONRAC and ITF East. The No APM Alternative would incorporate various planned security features to reduce increased demand on LAWAPD, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes. As such, the No APM Alternative would not result in a substantial increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into the No APM Alternative, this alternative would have similar impacts to the proposed Project with respect to law enforcement. Impacts would be less than significant.

Schools

Similar to the proposed Project, the No APM Alternative would not include residential development and would therefore not have a direct impact on student generation or demand for school services. However, under this alternative, LAWA would still require development of the Manchester Square area for the CONRAC. As such, the acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would occur prior to construction. The relocation of these schools would result in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, the No APM Alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools.

5.5.1.2.12 Transportation / Traffic

On-Airport Traffic

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. As compared to the proposed Project, there may be an increase in operational traffic congestion associated with shuttle buses operating out of the ITFs and CONRAC. As such, the increased traffic congestion could degrade the level of service within the CTA. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. It is expected that the No APM Alternative would have greater impacts than the proposed Project with respect to on-Airport traffic, but as shuttles would still be consolidated at the CONRAC and buses and other shuttles would be consolidated at the ITFs, impacts would be less than significant.

Off-Airport Traffic

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. To facilitate the movement of customers, busing or shuttles would be provided to and from the ITFs, CONRAC, and the CTA. Under this alternative, LAWA would coordinate with various rental car agencies to be housed in the CONRAC to develop a loop route for the shuttle between the CTA and the CONRAC to minimize congestion, and avoid construction activities for other portions of the proposed Project. It is assumed that shuttle buses would generally use Aviation Boulevard and Century Boulevard. Additional details regarding assumptions for this alternative with respect to off-Airport traffic are outlined in Appendix O.

Future Horizon Year 2024

Under the 2024 No APM Alternative, traffic in the study area would generally be consistent with the proposed Project, as shown in **Table 5-9**. As shown, this alternative would cause a significant traffic impact at 3 locations during the morning peak hour; at 2 locations during the midday peak hour; and at 5 locations during the evening peak hours. Overall, the No APM Alternative would significantly impact 7 intersections compared to 6 intersections under the proposed Project. The additional intersection with a significant impact under this alternative is located at Concourse Way/Century Boulevard. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a less than significant impact at all intersections with incorporation of mitigation. Incorporating similar mitigation measures, the No APM Alternative would have similar impacts to the proposed Project with respect to off-Airport traffic. Mitigation proposed under the proposed Project would also reduce the impact at the intersection of Concourse Way/Century Boulevard to less than significant. Therefore, impacts under Alternative 2 would be less than significant after mitigation.

[Draft]

Table 5-9: No APM Alternative Off-Airport Traffic Impacts (2024)

	AM PEAK HOUR		MIDDAY PEAK HOUR [1/]		PM PEAK HOUR	
LEVEL OF SERVICE	NO APM ALTERNATIVE	PROPOSED PROJECT	NO APM ALTERNATIVE	PROPOSED PROJECT	NO APM ALTERNATIVE	PROPOSED PROJECT
A	30	30	10	10	26	26
B	32	33	14	13	24	24
C	36	35	7	8	30	30
D	43	43	2	2	41	42
E	28	28	3	3	31	30
F	14	14	0	0	31	31
Total	183	183	36	36	183	183
Significant Impacts	3	2	2	2	5	5

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Future Horizon Year 2035

Under the 2035 No APM Alternative, traffic in the study area would generally be consistent with the proposed Project, as shown in **Table 5-10**. As shown, this alternative would cause a significant traffic impact at 3 locations during the morning peak hour; at 4 locations during the midday peak hour; and at 7 locations during the evening peak hours. Overall, the No APM Alternative would significantly impact the same 8 intersections that would be impacted under the proposed Project. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have an unavoidable significant impact at one intersection that cannot be mitigated. The No APM Alternative would have similar impacts to the proposed Project with respect to off-Airport traffic and would result in a significant unavoidable impact.

Table 5-10: No APM Alternative Off-Airport Traffic Impacts (2035)

	AM PEAK HOUR		MIDDAY PEAK HOUR 1/		PM PEAK HOUR	
LEVEL OF SERVICE	NO APM ALTERNATIVE	PROPOSED PROJECT	NO APM ALTERNATIVE	PROPOSED PROJECT	NO APM ALTERNATIVE	PROPOSED PROJECT
A	21	22	8	8	23	23
B	27	27	11	11	15	15
C	34	34	7	7	28	28
D	43	43	6	6	34	34
E	36	36	2	2	37	37
F	22	22	2	2	46	46
Total	183	183	36	36	183	183
Significant Impacts	3	2	2	2	7	5

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Construction Traffic

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. As such, construction activities under the No APM Alternative would be reduced as compared to the proposed Project. As discussed in Section 4.12.3, *Construction Surface Transportation*, the proposed Project would have less than significant impacts with the incorporation of mitigation and a standard control measure. Although construction traffic impacts under the No APM Alternative would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project on existing traffic conditions in the area.

Construction activities and related construction vehicle trips associated with the No APM Alternative would impact on- and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. It is anticipated that construction of the No APM Alternative would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Although impacts to traffic during construction would be less than under the proposed Project, impacts would remain significant even with incorporation of mitigation measures.

5.5.1.2.13 Utilities and Service Systems

Energy

The No APM Alternative proposes the construction of all proposed Project components with the exception of the APM system and associated facilities. As such, energy demand for the No APM Alternative would be reduced as compared to the proposed Project. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact on energy. As energy demand under the No APM Alternative would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Water

Under the No APM Alternative, all of the proposed Project components would be constructed except for the APM system and associated facilities. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. The No APM Alternative would include the full CONRAC facility as under the proposed Project, but would not include the APM MSF which includes train washing facilities. Thus, water use would be less under this alternative. As discussed in Section 4.13.3, *Water*, the proposed Project would have a less than significant impact on water. As water use under the No APM Alternative would be less than the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

5.5.1.2.14 Relationship to Proposed Project Objectives

Under the No APM Alternative, all of the proposed Project components would be constructed except for the APM system and associated facilities. The No APM Alternative would meet the proposed Project's objectives to enhance the passenger experience by providing new access options; provide easier and more efficient access to rental cars, but it would not achieve these objectives to the same extent as the proposed Project; and enhance and integrate the overall design of the proposed Project facilities with existing CTA structures and new airport facilities both inside and outside the CTA. However, the No APM Alternative would not include construction of the APM and associated facilities, and therefore would not provide a direct connection to transit. Also, without the APM, this alternative would not provide the same congestion relief of the CTA and surrounding streets as the proposed Project.

5.5.1.3 Alternative 3, Reduced Phase 1 Improvements Alternative

5.5.1.3.1 Aesthetics

Visual Character

The Reduced Phase 1 Improvements Alternative would result in the implementation of all the proposed Project components; however, the phasing of specific roadway and ITF components would be modified. Construction and operation of the components under Alternative 3 would result in similar changes to the visual character of the Project site compared to the proposed Project. The only difference would be the progression at which the visual character of the Project site would change due to the completion of specific roadway and ITF improvements during Phase 2 construction instead of Phase 1. Similar to the proposed Project, construction of Alternative 3 would not be out of character with the construction activities currently occurring within the Project area and would not result in a substantial change in views within the area. Under Alternative 3, similar screening and appropriate buffer mechanisms would be incorporated to reduce outside public views of construction activities. Development under Alternative 3 would also adhere to the architectural and landscaping standards established within the LAX Design Guidelines (Appendix B) and the Century Boulevard Streetscape Plan to create a cohesive, attractive, and functional environment for multiple users of the Airport. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a significant and unavoidable visual impact, including aesthetics and visual character, to the Theme Building as a result of the APM Guideway. However, as the same structures would be constructed under Alternative 3 as the proposed Project, this alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to aesthetics and visual resources. Impacts would remain significant and unavoidable.

Shading

Alternative 3 would implement all the proposed Project components, which would have potential to cast shadows on surrounding uses. Similar to the proposed Project, shading impacts under Alternative 3 would be consistent with the existing character of the highly developed area, which contains many sources of shading. Based on the highly developed nature of the area, the proposed improvements under Alternative 3 would not have substantial shading impacts, regardless of which construction phase they are implemented. Based on the location of the closest shade-sensitive uses, Alternative 3 would not affect any shade-sensitive uses, similar to the proposed Project. Construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading. As all components under the proposed Project would also be constructed under Alternative 3, impacts with respect to shading would be the same under both the proposed Project and Alternative 3. Impacts would be less than significant.

Light and Glare

Alternative 3 would implement all of the proposed Project components and thus introduce new sources of light and glare to the Project site. Similar to the proposed Project, Alternative 3 would incorporate light sources including poles and fixtures along the APM guideway, building entrance and, walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. These sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of a modern airport transportation area. Similar to the proposed Project, all construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. Alternative 3 would comply with the LAX Design Guidelines to minimize lighting spillover onto surrounding uses and would incorporate low-reflective materials to minimize any introduced sources of glare within the area. Alternative 3 would also adhere to City of Los Angeles Municipal Code (LAMC) requirements to reduce lighting and glare impacts and potential airport hazards. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare. As all components under the proposed Project would also be constructed under Alternative 3, impacts with respect to light and glare would be the same under both the proposed Project and Alternative 3. Impacts would be less than significant.

5.5.1.3.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants associated with construction-related activities with a significant and unavoidable impact with respect to regional emissions of VOC and NO_X, and to local concentrations of PM_{10}. Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. As such, the peak level of construction would potentially be reduced and may have lower increases in short-term emissions of criteria air pollutants. However, impacts would remain significant.

Under Alternative 3, there may be a temporary increase in traffic congestion, and therefore traffic-related emissions, associated with the modified phasing of the proposed components. However, operational emissions would not substantially differ under the Reduced Phase 1 Improvements Alternative than under the proposed Project as all of the Project elements would ultimately be constructed. Therefore, operational impacts to both regional emissions and local concentrations under the Reduced Phase 1 Improvements Alternative are expected to be similar to the proposed Project.

Although the Reduced Phase 1 Improvements Alternative would involve less construction in the Phase 1 construction period, and would potentially have lower impacts than would occur under the proposed Project with respect to construction-related PM_{10}, VOC, and NO_X emissions, the construction related air quality impacts would likely remain significant for these pollutants. With respect to operations, the Reduced Phase 1 Improvements Alternative would be similar to the proposed Project with respect to regional emissions, as well as local concentrations impacts - which were found to be significant and unavoidable for PM_{10} under the proposed Project. Therefore, construction and operational impacts under Alternative 3 would likely be significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

Human Health

As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. Under the Reduced Phase 1 Improvements Alternative, TAC emissions during the peak year of construction would potentially be reduced due to the modification of phasing for several roadway and ITF components. Thus, this alternative may result in lower long-term risks for infants and children due to a reduced length of exposure during the early years of child development.

Under Alternative 3, there may be a temporary increase in traffic congestion, and therefore traffic-related emissions, associated with the modified phasing of the proposed components. However, operational TAC emissions would not substantially differ under the Reduced Phase 1 Improvements Alternative than under the proposed Project, as all of the Project elements would ultimately be constructed. Therefore, operational impacts to both long-term (cancer and chronic non-cancer) and acute risks under the Reduced Phase 1 Improvements Alternative are expected to be similar to the proposed Project. Therefore, health risks impacts associated with the Reduced Phase 1 Improvements Alternative would likely be less than significant.

5.5.1.3.3 Biological Resources

The Reduced Phase 1 Improvements Alternative would result in the implementation of all the proposed Project components. The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. Construction and operations of the components under Alternative 3 would result in similar impacts as the Project on street trees and nesting birds within the Project site. As compared to the proposed Project, Alternative 3 would not substantially change the number of trees to be removed. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Incorporating the same standard control measures as mitigation measures into the Reduced Phase 1 Improvements Alternative, this alternative would have similar impacts to the proposed Project with respect to raptors, and nesting birds and eggs. Impacts would be less than significant.

5.5.1.3.4 Cultural Resources

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, this alternative would include the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. As with the proposed Project, Alternative 3 would not result in the demolition of any historic building; however, the demolition of the Administration Building could damage, destroy, or reduce the integrity or significance of the 1961 ATCT. Similar to the proposed Project, a mitigation measure would be implemented under Alternative 3 to preserve the character-defining features of the 1961 ATCT in accordance with the Secretary of the Interior's Standards for Rehabilitation. As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a significant and unavoidable visual impact to the Theme Building as a result of the APM Guideway. Similar to the proposed Project, Alternative 3 would result in the introduction of the same structures that would reduce the level of visual prominence of the Theme Building within the CTA, thus reducing its ability to convey its historical significance. Similar to the proposed Project, mitigation measures would be implemented under Alternative 3 to guide the preservation and future use of the Theme Building and to visually distinguish proposed new construction to maximize its level of visual prominence in the CTA. Development under Alternative 3 would also adhere to the architectural standards established within the LAX Design Guidelines to ensure visual compatibility of proposed Project with the Theme Building. However, the same structures as the proposed Project would be constructed under Alternative 3. Therefore, Alternative 3 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to historic resources. Impacts would remain significant and unavoidable.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. As compared to the proposed Project, Alternative 3 would result in the same amount of ground disturbance and the same potential to impact previously unknown buried archaeological resources, paleontological resources, and human remains. With incorporation of the same standard control measures as mitigation measures into Alternative 3, impacts with respect to archaeological resources, paleontological resources, and human remains would be less than significant.

5.5.1.3.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project would be less than either the Future Without Project scenarios in 2024 and 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation, would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with the incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. As all Project components would ultimately be constructed under the Reduced Phase 1 Improvements Alternative, the GHG emissions from this alternative would not substantially differ from the proposed Project. Therefore, GHG impacts from the Reduced Phase 1 Improvements Alternative would be significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

5.5.1.3.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, this alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. The demolition of buildings would have the potential to result in the exposure of ACMs or LBP. Excavation activities would also have the potential to encounter contaminated soils or groundwater from the known hazardous materials sites in the Project area. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As Alternative 3 would include construction of all proposed Project components, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Exposure of Workers to Hazardous Materials

Alternative 3 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. Excavation activities would have potential to encounter contaminated soils or groundwater. As such, Alternative 3 may result in previously unidentified soil and/or perched groundwater contamination to be encountered during construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that that contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As Alternative 3 would include construction of all proposed Project components, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Alternative 3 would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. Alternative 3 would also introduce uses and activities on the Project site that would increase the use of hazardous materials and emissions. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Similar to the proposed Project, LAWA would still require acquisition of the existing Stella Middle Charter and Bright Star Secondary Charter Academies on the Manchester Square site. LAWA intends to acquire and relocate these schools prior to the commencement of construction activities. However, if the schools have not been relocated when columns for the APM guideway need to be erected, construction may occur within one-quarter mile of these schools. Construction activities would be limited to the APM columns, which would involve no or limited amounts of acutely hazardous material. Construction contractors would be required to handle, store, and use any hazardous construction materials in accordance with manufacturers' instructions and in compliance with the applicable standards and regulations described in Section 4.6.1.3. No other schools are located or proposed within one-quarter mile of the Project site. As such, no hazardous emissions or hazardous materials would occur within one-quarter mile of an existing or proposed school. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. As development of Manchester Square would still occur under Alternative 3, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

Alternative 3 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, or the construction of new roadways and various roadway improvements. There would also be a substantial increase in volume in the use and storage of hazardous materials on the Project site. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of the Project components. However, construction of the various Project components may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same standard control measures into Alternative 3, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

Alternative 3 would introduce new uses and activities and would alter ground access across the Project site. Traffic congestion associated with construction activities could impede the movement of emergency vehicles. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of mitigation similar to that identified for the proposed Project would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes during construction. Additionally, there may be a temporary increase in traffic congestion associated with the modified phasing of the proposed components. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measures into Alternative 3, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.1.3.7 Hydrology, Water Quality, and Groundwater

Similar to the proposed Project, Alternative 3 would require construction of new storm-drain systems, including retention basins used to retain the 10-year design storm. Construction activities under this alternative would involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Similar to the proposed Project, Alternative 3 would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. Incorporating similar mitigation measures and options for consideration for stormwater management would minimize surface water runoff and reduce degradation of surface water runoff and water quality for Alternative 3. As such, Alternative 3 would have similar impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.1.3.8 Land Use and Planning

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, the same land uses would be constructed, and the policy and entitlement actions that are part of the Project would still occur. As discussed in Section 4.8, *Land Use and Planning*, the proposed Project would have a less than significant impact related to land use and planning. As the land use changes under Alternative 3 would be the same as the proposed Project, land use and planning under this alternative would have a similar impact as the proposed Project. Impacts would be less than significant.

5.5.1.3.9 Noise

Road Traffic Noise

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. As such, there may be a temporary increase in traffic congestion associated with the modified phasing of the proposed components. While temporary, this increased traffic congestion could cause a temporary increase in road traffic noise. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed Project would have a less than significant impact. It is expected that in general, Alternative 3 would have similar impacts with respect to road traffic noise. Impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Construction activities for Alternative 3 would be the same as for the proposed Project; however, construction phasing for certain roadway and ITF components would be shifted from Phase 1 to Phase 2. As this alternative would still include construction of the CONRAC in close proximity to sensitive receptors, noise impacts from construction equipment would be similar to the proposed Project. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts under the proposed Project would be less than significant. Construction traffic noise and construction equipment vibration impacts under Alternative 3 would be similar to the proposed Project and would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. Incorporating similar mitigation measures, this alternative would have similar impacts to the proposed Project with respect to construction equipment noise. Impacts would be less than significant.

Transit Noise and Vibration

Under Alternative 3, construction and operations of the APM transit system would be the same as under the proposed Project. As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact. As the APM transit system under Alternative 3 would be the same as the proposed Project, transit noise and vibration under this alternative would have a similar impact as the proposed Project. Impacts would be less than significant.

5.5.1.3.10 Population and Housing

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project. Similar to the proposed Project, Alternative 3 would not include residential development, but would displace the same nominal number of dwelling units to enable construction of the Project components. Additionally, construction and operation of the components under Alternative 3 would result in a similar generation of employment compared to the proposed Project. While the phasing of the roadway improvements would alter the distribution of annual construction jobs over the 14-year construction schedule, Alternative 3 would generate similar construction employment compared to the proposed Project. Alternative 3 would comply with LAWA's existing PLA by maximizing the amount of construction employment from within the local Los Angeles area. As such, employment generated under this alternative would be similar compared to the proposed Project, and would be consistent with adopted growth forecasts or policies. As discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact on population and housing. As with the proposed Project, population and housing impacts under Alternative 3 would be less than significant.

5.5.1.3.11 Public Services

Fire Protection

Alternative 3 proposes the construction of all proposed Project components. As such, this alternative would result in a similar increase of uses that would generate a demand for fire protection services by passengers and employees. Additionally, operation of the CONRAC would still occur, which would result in an increased volume of the use and storage of hazardous materials on the Project site. Similar to the proposed Project, Alternative 3 would place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area, compared to existing conditions. However, the handling and storage of hazardous materials under this alternative would comply with applicable federal, state, and local regulations to ensure spills and releases would not create a hazard to the public or the environment, thus reducing demand on LAFD Fire Station 95.

Under Alternative 3, there may be a temporary increase in traffic congestion associated with the modified phasing of the proposed components. While temporary, this increased traffic congestion could delay LAFD's emergency response activities by impeding the movement of emergency vehicles. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAFD regarding road closures. As such, Alternative 3 would not result in a substantial increase in on-Airport population or land use changes that would require the need for new or expanded facilities, changes to fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. As discussed in Section 4.11.1, *Fire Protection*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 3, this alternative would have similar impacts to the proposed Project with respect to fire protection. Impacts would be less than significant.

Law Enforcement

Similar to the proposed Project, Alternative 3 would result in similar increase of uses that would generate a demand for law enforcement services by passengers and employees. Under this alternative, there may be an increase in traffic congestion associated with the modified phasing of the proposed components. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAWAPD regarding road closures. Similar to the proposed Project, Alternative 3 could include the placement of a satellite LAWAPD office within proximity to the CONRAC or ITF East. Alternative 3 would incorporate various planned security features to reduce increased demand on LAWAPD, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes. As such, Alternative 3 would not result in a substantial increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 3, this alternative would have similar impacts to the proposed Project with respect to law enforcement. Impacts would be less than significant.

Schools

Alternative 3 would not include residential development and would therefore not have a direct impact on student generation or demand for school services. Similar to the proposed Project, Alternative 3 would require development of the Manchester Square area for the CONRAC. As such, the acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be required, resulting in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, Alternative 3 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools. Impacts would be significant.

5.5.1.3.12 Transportation / Traffic

On-Airport Traffic

Alternative 3 proposes the construction of all proposed Project components. However, under Alternative 3, there may be a temporary increase in traffic congestion associated with the modified phasing of the proposed components. As such, the increased traffic congestion could degrade the level of service within the CTA. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. It is expected that Alternative 3 would have similar impacts to the proposed Project with respect to on-Airport traffic. Therefore, impacts would be less than significant.

Off-Airport Traffic

As discussed in Section 5.4.2.3, *Alternative 3, Reduced Phase 1 Roadway Improvements Alternative*, this alternative includes all facilities as the proposed Project; however, construction phasing for certain roadway and ITF components would be shifted from Phase 1 to Phase 2.

Future Horizon Year 2024

Under the 2024 Alternative 3 conditions, traffic in the study area would generally be consistent with the proposed Project, as shown in **Table 5-11**. As shown, this alternative would cause a significant traffic impact at 5 locations during the morning peak hour; at 2 locations during the midday peak hour; and at 7 locations during the evening peak hours. Overall, Alternative 3 would significantly impact 9 intersections as compared to 6 intersections under the proposed Project. The three additional intersections that would be significantly impacted include:

- Airport Boulevard and Westchester Parkway/W. Arbor Vitae Street;
- Airport Boulevard and W. 98th Street; and
- Aviation Boulevard and Century Boulevard.

Table 5-11: Alternative 3 Off-Airport Traffic Impacts (2024)

	AM PEAK HOUR		MIDDAY PEAK HOUR 1/		PM PEAK HOUR	
LEVEL OF SERVICE	REDUCED PHASE 1 ALTERNATIVE	PROPOSED PROJECT	REDUCED PHASE 1 ALTERNATIVE	PROPOSED PROJECT	REDUCED PHASE 1 ALTERNATIVE	PROPOSED PROJECT
A	31	30	10	10	25	26
B	30	33	14	13	23	24
C	36	35	7	8	31	30
D	43	43	2	2	41	42
E	27	28	3	3	32	30
F	16	14	0	0	31	31
Total	183	183	36	36	183	183
Significant Impacts	5	2	2	2	7	5

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

A freeway mainline analysis was also conducted for this alternative. No significant impacts at the 23 freeway mainline segments would occur during the morning and/or evening peak hours (see Appendix O).

As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a less than significant impact at all intersections with incorporation of mitigation. Incorporating similar mitigation measures at corresponding impacted intersections, Alternative 3 would have similar impacts to the proposed Project with respect to off-Airport traffic. Additional mitigation measures at the three additionally significantly impacted intersections would need to be implemented under Alternative 3; but the impacts under this alternative could be mitigated. These mitigation measures would be:

- Airport Boulevard and Westchester Parkway/Arbor Vitae Street. The improvement would provide a separate right-turn lane on the westbound approach. The westbound approach would have a left-turn lane, two through lanes and a separate right-turn lane. Implementation of this improvement would fully mitigate the significant impact at this location.
- Airport Boulevard and 98th Street. Implementation of TDM Program would fully mitigate the significant impact at this location.
- Airport Boulevard and Century Boulevard. The improvement would provide a signal modification to include a southbound right-turn overlap arrow, allowing right-turning vehicles to proceed at the same time the eastbound left-turn turn arrow is green. This improvement would require the prohibition of 'U'-turns in the eastbound direction. Implementation of this improvement would fully mitigate the significant impact at this location. If the prohibition of eastbound U-turns is not approved by LADOT, then this intersection would remain significantly impacted.

With implementation of these mitigation measures, plus the ones identified in Section 4.12.2.9, impacts to off-Airport traffic would be less than significant.

Future Horizon Year 2035

The remaining roadway improvements under the proposed Project would be completed in Phase 2 of Alternative 3. As such, impacts for the horizon year of 2035 under Alternative 3 would be similar to those under the proposed Project. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have an unavoidable significant impact at one intersection that cannot be mitigated. Alternative 3 would have similar impacts to the proposed Project with respect to off-Airport traffic and would result in a significant unavoidable impact.

Construction Traffic

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project. However, construction activities under Alternative 3 could increase interim traffic congestion until all proposed Project elements are in place. As discussed in Section 4.12.3, *Construction Surface Transportation*, the proposed Project would have less than significant impacts with the incorporation of mitigation and a standard control measure. As construction activities proposed under Alternative 3 would be similar to that under the proposed Project's, this alternative would have a similar impact to the proposed Project on existing traffic conditions in the area. Impacts would be less than significant with the incorporation of mitigation and a standard control measure.

Construction activities and related construction vehicle trips associated with Alternative 3 would impact on- and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. It is anticipated that construction of Alternative 3 would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Although impacts to traffic during construction would be less than under the proposed Project, impacts would remain significant even with incorporation of mitigation measures.

5.5.1.3.13 Utilities and Service Systems

Energy

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project. As such, energy demand for this alternative would be the same as the proposed Project. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact on energy. As energy demand under Alternative 3 would be equivalent to that under the proposed Project, this alternative would have the same impact to energy use as the proposed Project. Impacts would be less than significant.

Water

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. As Alternative 3 would include the complete CONRAC facility as the proposed Project, water use would be similar. As discussed in Section 4.13.3, *Water*, the proposed Project would have a less than significant impact on water. As water use under Alternative 3 would be similar to that under the proposed Project, this alternative would have a similar impact to the proposed Project. Impacts would be less than significant.

5.5.1.3.14 Relationship to Proposed Project Objectives

Under Alternative 3, all of the proposed Project components would be constructed; however, the phasing of roadway and ITF components would be modified. Alternative 3 would meet all of the proposed Project's objectives. Alternative 3 would result in deferring the full benefits of the Project to traffic congestion within the CTA and surrounding streets until later years.

5.5.1.4 Alternative 4, One ITF Parking Structure Alternative

5.5.1.4.1 Aesthetics

Visual Character

The One ITF Parking Structure Alternative would result in the implementation of all the proposed Project components, with exception of the public parking garage at the ITF East. Construction and operations under Alternative 4 would result in similar changes to the visual character of the Project site compared to the proposed Project. The only difference would be that the site proposed for the multi-level parking structure at the ITF East would consist of a surface parking lot. Implementation of Alternative 4 would not affect any notable views within the area, nor would it result in the removal of any valued scenic natural resources on the Project site. Development under Alternative 4 would also adhere to the architectural and landscaping standards established within the LAX Design Guidelines to create a cohesive, attractive, and functional environment for multiple users of the Airport. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a significant and unavoidable visual impact, including aesthetics and visual character, to the Theme Building as a result of the APM Guideway. However, as the same structures would be constructed under Alternative 4 as the proposed Project, this alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to aesthetics and visual resources. Impacts would remain significant and unavoidable.

Shading

Alternative 4 would implement all of the proposed Project components except the public parking garage at the ITF East. Similar to the proposed Project, the development of components under Alternative 4 would have potential to cast shadows on surrounding uses. Alternative 4 would slightly reduce the amount of height and massing on a portion of the Project site, which would reduce potential shading impacts in comparison to the proposed Project. However, the shading impacts under Alternative 4 would be consistent with the existing character of the highly developed area, which contains many sources of shading. Based on the location of the closest shade-sensitive uses, Alternative 4 would not affect any shade-sensitive uses. Construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading. As Alternative 4 would implement all components under the proposed Project except the public parking garage at the ITF East, impacts with respect to shading would be slightly reduced when compared to the proposed Project. Impacts would be less than significant.

Light and Glare

Alternative 4 would implement all of the proposed Project components except the public parking garage at the ITF East. Similar to the proposed Project, Alternative 4 would incorporate light sources including poles and fixtures along the APM guideway, building entrance and, walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. These sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of a modern airport transportation area. While not substantial, Alternative 4 would slightly reduce the amount of illumination on the Project site in comparison to the proposed Project. Similar to the proposed Project, all construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. Alternative 4 would comply with the LAX Design Guidelines to minimize lighting spillover onto surrounding uses and would incorporate low-reflective materials to minimize any introduced sources of glare within the area. Alternative 4 would also adhere to LAMC requirements to reduce lighting and glare impacts and potential airport hazards. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare. As Alternative 4 would implement all components under the proposed Project except the public parking garage at the ITF East, impacts with respect to light and glare would be slightly reduced when compared to the proposed Project. Impacts would be less than significant.

5.5.1.4.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants associated with construction-related activities with a significant and unavoidable impact with respect to regional emissions of VOC and NO_X, and to local concentrations of PM_{10}. Alternative 4 would implement all of the proposed Project components except the public parking garage at the ITF East. Under this alternative, regional construction emissions would be slightly reduced due to a reduced amount of construction needed for a surface parking lot at the ITF East instead of a multilevel parking structure. Reduced construction activity under this alternative may also slightly reduce peak localized concentrations, depending on scheduling. Therefore, this alternative may have lower increases in short-term emissions of criteria air pollutants.

Operational emissions would not substantially differ under the One ITF Parking Structure Alternative than under the proposed Project since almost all of the Project elements would still be constructed. The reduction in parking spaces at the ITF East would not affect overall parking demand at the Airport; it is assumed that this demand would be accommodated by local private parking lots. Therefore, operational impacts to both regional emissions and local concentrations under the One ITF Parking Structure Alternative are expected to be similar to the proposed Project.

The One ITF Parking Structure Alternative may involve slightly less construction in the peak construction period, thus would potentially have lower impacts than would occur under the proposed Project with respect to construction-related PM_{10}, VOC, and NO_X emissions. With respect to operations, the One ITF Parking Structure Alternative would be similar to the proposed Project with respect to regional emissions, as well as local concentrations impacts, which were found to be significant and unavoidable for PM_{10} under the proposed Project. Therefore, construction and operational related impacts under Alternative 4 would likely remain significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

Human Health

As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. Under the One ITF Parking Structure Alternative, TAC emissions during the peak year of construction would potentially be slightly reduced due to the reduced amount of construction needed for a surface parking lot at the ITF East instead of a multilevel parking structure. Thus, this alternative may result in slightly lower long-term risks.

Operational TAC emissions would not substantially differ under the One ITF Parking Structure Alternative than under the proposed Project since almost all of the Project elements would still be constructed. The reduction in parking spaces at the ITF East would not affect overall parking demand at the Airport; it is assumed that this demand would be accommodated by local private parking lots. Therefore, operational impacts to both long-term (cancer and chronic non-cancer) and acute risks under the One ITF Parking Structure Alternative are expected to be similar to the proposed Project. Therefore, health risks impacts associated with the One ITF Parking Structure Alternative would likely be less than significant.

5.5.1.4.3 Biological Resources

The One ITF Parking Structure Alternative would result in the implementation of all the proposed Project components with exception of the public parking garage at the ITF East. Instead, the ITF East would be developed as a surface parking lot instead of a multi-level parking structure. The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. Construction and operations of the components under Alternative 4 would result in similar impacts as the Project on street trees and nesting birds within the Project site. As compared to the proposed Project, Alternative 4 would not substantially change the number of trees to be removed. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Incorporating the same standard control measures as mitigation measures into Alternative 4, this alternative would have similar impacts to the proposed Project with respect to trees, raptors, and nesting birds and eggs. Impacts would be less than significant.

5.5.1.4.4 Cultural Resources

The One ITF Parking Structure Alternative would implement all of the proposed Project components except the public parking garage at the ITF East. Therefore, this alternative would include the demolition of existing buildings and introduction of new structures. As with the proposed Project, Alternative 4 would not result in the demolition of any historic building; however, the demolition of the Administration Building could damage, destroy, or reduce the integrity or significance of the 1961 ATCT. Similar to the proposed Project, a mitigation measure would be implemented under Alternative 4 to preserve the character-defining features of the 1961 ATCT in accordance with the Secretary of the Interior's Standards for Rehabilitation. As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a significant and unavoidable visual impact to the Theme Building as a result of the APM Guideway. Similar to the proposed Project, Alternative 4 would result in the introduction of the same structures that would reduce the level of visual prominence of the Theme Building within the CTA. Similar to the proposed Project, mitigation measures would be implemented under Alternative 4 to guide the preservation and future use of the Theme Building and to ensure that it is visually distinguished from the proposed new construction to maximize its level of visual prominence in the CTA. Development under Alternative 4 would also adhere to the architectural standards established within the LAX Design Guidelines to ensure visual compatibility of proposed Project with the Theme Building. However, the same structures as the proposed Project would be constructed under Alternative 4; therefore, Alternative 4 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to historic resources. Impacts would remain significant and unavoidable.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. As compared to the proposed Project, Alternative 4 would result in the same footprint of ground disturbance, although the depth of excavation for the surface parking lot would be less than required for the ITF East, which would result in reduced potential to impact previously unknown buried archaeological resources, paleontological resources, and human remains. With incorporation of the same standard control measures as mitigation measures into Alternative 4, impacts with respect to archaeological resources, paleontological resources, and human remains would be less than significant.

5.5.1.4.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project would be less than either the Future Without Project scenarios in 2024 and 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with the incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. As almost all of the Project components would be constructed under the One ITF Parking Structure Alternative, the GHG emissions from this alternative would not substantially differ from the proposed Project. Therefore, GHG impacts from the One ITF Parking Structure Alternative would be significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project.

5.5.1.4.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

The One ITF Parking Structure Alternative proposes the construction of all proposed Project components with the exception of the public parking garage at the ITF East. Therefore, this alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. The demolition of buildings would have the potential to result in the exposure of ACMs or LBP. Excavation activities would also have the potential to encounter contaminated soils or groundwater from the known hazardous materials sites in the Project area. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As Alternative 4 slightly reduces the overall amount of construction activities, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Exposure of Workers to Hazardous Materials

Alternative 4 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. As such, excavation activities under Alternative 4 may result in previously unidentified soil and/or perched groundwater contamination to be encountered construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that that contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As Alternative 4 slightly reduces the overall amount of construction activities, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Alternative 4 would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. Alternative 4 would also introduce uses and activities on the Project site that would increase the use of hazardous materials and emissions. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Similar to the proposed Project, Alternative 4 would still, require acquisition of the existing Stella Middle Charter and Bright Star Secondary Charter Academies on the Manchester Square site. LAWA intends to acquire and relocate these schools prior to the commencement of construction activities. However, if the schools have not been relocated when columns for the APM guideway need to be erected, construction may occur within one-quarter mile of these schools. Construction activities would be limited to the APM columns, which would involve no or limited amounts of acutely hazardous material. Construction contractors would be required to handle, store, and use any hazardous construction materials in accordance with manufacturers' instructions and in compliance with the applicable standards and regulations described in Section 4.6.1.3. No other schools are located or proposed within one-quarter mile of the Project site. As such, no hazardous emissions or hazardous materials would occur within one-quarter mile of an existing or proposed school. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. As development of Manchester Square would occur under Alternative 4, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

Alternative 4 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, or the construction of new roadways and various roadway improvements. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of the Project components. However, construction of the various Project components may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of standard control measures.

Incorporating the same measures into Alternative 4, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

Alternative 4 would introduce new uses and activities and would alter ground access across the Project site. Traffic congestion associated with construction activities could impeding the movement of emergency vehicles. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same measures into Alternative 4, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.1.4.7 Hydrology, Water Quality, and Groundwater

Similar to the proposed Project, Alternative 4 would require construction of new storm-drain systems, including retention basins used to retain the 10-year design storm. Construction activities under this alternative would involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Although this alternative does not involve construction of the public parking garage at the ITF East, impervious surfaces under this alternative would be the same as the proposed Project. Similar to the proposed Project, Alternative 4 would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. Incorporating similar mitigation measures and options for consideration for stormwater management would minimize surface water runoff and reduce degradation of surface water runoff and water quality for Alternative 4. As such, Alternative 4 would have similar impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.1.4.8 Land Use and Planning

Alternative 4 proposes the construction of all proposed Project components with the exception of the public parking garage at the ITF East. The recently adopted 2016-2040 RTP/SCS identifies both the proposed ITF West and the ITF East as ground access improvements at LAX that would support SCAG's regional planning policies and major initiative to improve airport access. As discussed in Section 4.8, *Land Use and Planning*, the proposed Project would have a less than significant impact related to land use and planning. Alternative 4 would replace the ITF East with a surface parking lot with approximately 1,400 parking spaces, 6,900 fewer than the 8,300 parking spaces that would be provided by the ITF East public parking structure proposed as part of the Project. Even though 8,000 parking spaces would be provided at the ITF West public parking garage, Alternative 4 would still result in an increase in off-Airport parking needs, and as such, private companies would continue to develop land for private, remote public parking facilities. As such, Alternative 4 would conflict with SCAG's regional planning goals and policies related to enhancing ground access to LAX and reducing congestion of the transportation system in the LAX area. Thus, land use and planning impacts would be significant.

5.5.1.4.9 Noise

Road Traffic Noise

Alternative 4 proposes the construction of all proposed Project components except for the public parking garage at the ITF East. A surface parking lot at this location as compared to a multi-level parking structure would not substantially change traffic on the local roadway network. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed Project would have a less than significant impact. It is expected that Alternative 4 would have similar impacts to the proposed Project with respect to traffic, and therefore to road traffic noise. As such, impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Construction activities for Alternative 4 would be slightly reduced as compared to the proposed Project as this alternative does not include construction of the multi-level parking structure at the ITF East. However, as with the proposed Project, Alternative 4 would include construction of the CONRAC in close proximity to receptors sensitive to noise and vibration from construction traffic and equipment. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts under the proposed Project would be less than significant. Compared to the proposed Project, Alternative 4 would have similar construction traffic noise and construction equipment vibration impacts; impacts would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. Compared to the proposed Project, Alternative 4 would have similar construction equipment noise impacts, with the exception of the area ITF East site for which impacts would be less. With the adoption of similar mitigation, construction equipment noise associated with Alternative 4 would be less than significant.

Transit Noise and Vibration

Under Alternative 4, construction and operations of the APM transit system would be the same as under the proposed Project. As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact. As the APM transit system would be the same under Alternative 4 as the proposed Project, transit noise and vibration under this alternative would have a similar impact as the proposed Project. Impacts would be less than significant.

5.5.1.4.10 Population and Housing

The One ITF Parking Structure Alternative would result in the implementation of all the proposed Project components with exception of the public parking garage at the ITF East. Similar to the proposed Project, this alternative would not include residential development, but would displace the same nominal number of dwelling units to enable construction of the Project components. Construction of the components under Alternative 4 would result in comparatively less generation of employment than for the proposed Project. Operation of ta surface parking lot instead of a multi-level parking structure would not substantially affect the amount of employment generated compared to the proposed Project. Therefore, as with the proposed Project, employment generated under this alternative would be consistent with adopted growth forecasts and policies. As discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact on population and housing. As with the proposed Project, population and housing impacts under Alternative 4 would be less than significant.

5.5.1.4.11 Public Services

Fire Protection

Alternative 4 proposes the construction of all proposed Project components with the exception of the public parking garage at the ITF East. As such, fire protection demand for this alternative would be slightly reduced as compared to the proposed Project. However, similar to the proposed Project, the One ITF Parking Structure Alternative would result in a similar increase of uses that would generate a demand for fire protection services by passengers and employees. While the site proposed for the ITF East would consist of a surface parking lot instead of a multi-level parking, this would not represent a substantial change in use. Development of the surface parking lot would comply with applicable fire and building code requirements and provide adequate emergency access and fire safety features. Operation of the CONRAC would still occur, which would result in an increased volume of the use and storage of hazardous materials on the Project site. Alternative 4 would place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area, compared to existing conditions. However, the handling and storage of hazardous materials under this alternative would comply with applicable federal, state, and local regulations to ensure spills and releases would not create a hazard to the public or the environment, thus reducing demand on LAFD Fire Station 95.

Construction activities under Alternative 4 would increase interim traffic congestion until all proposed Project elements are in place, which could impede LAFD's emergency response activities across the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAFD regarding road closures. Additionally, Alternative 4 would not result in a substantial increase in on-Airport population or land use changes that would require the need for new or expanded facilities, changes to fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. As discussed in Section 4.11.1, *Fire Protection*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 4, this alternative would have similar impacts to the proposed Project with respect to fire protection. Impacts would be less than significant.

Law Enforcement

Similar to the proposed Project, Alternative 4 would result in similar increase of uses that would generate a demand for law enforcement services by passengers and employees. While the site proposed for the ITF East would consist of a surface parking lot instead of a multi-level parking, this would not represent a substantial change in use. Construction activities under Alternative 4 would increase traffic congestion, which could inhibit LAWAPD from meeting its response time requirements cross the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAWAPD regarding road closures. However, similar to the proposed Project, Alternative 4 could include the placement of a satellite LAWAPD office within proximity to the CONRAC or the surface parking lot at the ITF East site to maintain adequate response times across the Project site. Alternative 4 would incorporate various planned security features to reduce increased demand on LAWAPD, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes. As such, Alternative 4 would not result in a substantial increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 4, this alternative would have similar impacts to the proposed Project with respect to law enforcement. Impacts would be less than significant.

Schools

Similar to the proposed Project, Alternative 4 would not include residential development and would therefore not have a direct impact on student generation or demand for school services. However, under this alternative, LAWA would still require development of the Manchester Square area for the CONRAC. As such, the acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be required, resulting in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, Alternative 4 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools.

5.5.1.4.12 Transportation / Traffic

On-Airport Traffic

Alternative 4 proposes the construction of all proposed Project components except for the public parking garage at the ITF East. As such, on-Airport traffic would be similar to the proposed Project. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. It is expected that Alternative 4 would have similar impacts to the proposed Project with respect to on-Airport traffic. Therefore, impacts would be less than significant.

Off-Airport Traffic

Alternative 4 would consist of all proposed Project components except for the public parking structure at the ITF East. The site without the public parking structure would still include the development of an APM station and internal circulation, as well as development of a surface parking lot. Additional details regarding assumptions for this alternative with respect to off-Airport traffic are outlined in Appendix O.

Future Horizon Year 2024

Under the 2024 Alternative 4 conditions, traffic in the study area would generally be consistent with the proposed Project, as shown in **Table 5-12**. As shown, this alternative would cause a significant traffic impact at 2 locations during the morning peak hour; at 2 locations during the midday peak hour; and at 5 locations during the evening peak hours. Overall, Alternative 4 would significantly impact the same 6 intersections as under the proposed Project. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a less than significant impact at all intersections with incorporation of mitigation. Incorporating similar mitigation measures at corresponding impacted intersections, Alternative 4 would have similar impacts to the proposed Project with respect to off-Airport traffic. Impacts would be less than significant.

Table 5-12: Alternative 4 Off-Airport Traffic Impacts (2024)

	AM PEAK HOUR		MIDDAY PEAK HOUR [1/]		PM PEAK HOUR	
LEVEL OF SERVICE	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT
A	30	30	10	10	26	26
B	33	33	13	13	24	24
C	35	35	8	8	30	30
D	43	43	2	2	42	42
E	28	28	3	3	30	30
F	14	14	0	0	31	31
Total	183	183	36	36	183	183
Significant Impacts	2	2	2	2	5	5

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Future Horizon Year 2035

Under the 2035 Alternative 4 conditions, traffic in the study area would generally be consistent with the proposed Project, as shown in **Table 5-13**. As shown, this alternative would cause a significant traffic impact at 3 locations during the morning peak hour; at 4 locations during the midday peak hour; and at 7 locations during the evening peak hours. Overall, Alternative 4 would significantly impact the same 8 intersections as under the proposed Project. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have an unavoidable significant impact at one intersection that cannot be mitigated. Alternative 4 would have similar impacts to the proposed Project with respect to off-Airport traffic and would result in a significant unavoidable impact.

Table 5-13: Alternative 4 Off-Airport Traffic Impacts (2035)

	AM PEAK HOUR		MIDDAY PEAK HOUR [1/]		PM PEAK HOUR	
LEVEL OF SERVICE	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT	ONE ITF PARKING STRUCTURE ALTERNATIVE	PROPOSED PROJECT
A	22	22	8	8	23	23
B	25	26	11	11	14	15
C	35	34	7	7	29	28
D	43	43	6	6	34	34
E	36	36	2	2	37	37
F	22	22	2	2	46	46
Total	183	183	36	36	183	183
Significant Impacts	3	3	4	4	7	7

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Construction Traffic

Alternative 4 proposes the construction of all proposed Project components with the exception of the public parking garage at the ITF East. As such, construction activities under this alternative would be slightly reduced as compared to the proposed Project. As discussed in Section 4.12.3, *Construction Surface Transportation*, the proposed Project would have less than significant impacts with the incorporation of mitigation and a standard control measure. As the One ITF Parking Structure Alternative would be reduced as compared to the proposed Project's construction traffic, it would have less impact than the proposed Project on existing traffic conditions in the area. Impacts would be less than significant with the incorporation of mitigation and a standard control measure.

Construction activities and related construction vehicle trips associated with Alternative 4 would impact on- and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. It is anticipated that construction of Alternative 4 would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Although impacts to traffic during construction would be less than under the proposed Project, impacts would remain significant even with incorporation of mitigation measures.

5.5.1.4.13 Utilities and Service Systems

Energy

The One ITF Parking Structure Alternative would result in the implementation of all the proposed Project components with exception of the public parking garage at the ITF East. As such, energy demand for this alternative would be slightly reduced as compared to the proposed Project. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact on energy. As energy demand under Alternative 4 would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Water

The One ITF Parking Structure Alternative would result in the implementation of all the proposed Project components with exception of the public parking garage at the ITF East. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. As Alternative 4 would include the complete CONRAC facility as under the proposed Project, water use would be the similar. As discussed in Section 4.13.3, *Water*, the proposed Project would have a less than significant impact on water. As water use under Alternative 4 would be similar to that under the proposed Project, this alternative would have a similar impact to the proposed Project. Impacts would be less than significant.

5.5.1.4.14 Relationship to Proposed Project Objectives

Under the One ITF Parking Structure Alternative, all of the proposed Project components would be constructed except for the public parking garage at the ITF East. This alternative would meet all of the proposed Project's objectives listed above under Section 5.3.

5.5.1.5 Alternative 5, Increased Transportation Demand Management Program Alternative

5.5.1.5.1 Aesthetics

Visual Character

The Increased TDM Program Alternative would result in the implementation of all the proposed Project components; however, it would assume a greater participation in the TDM Program. Implementation of an increased TDM program under Alternative 5 would not change the physical components of any facilities under the proposed Project. Construction and operation of the components under Alternative 5 would result in similar changes to the visual character of the Project site compared to the proposed Project. Similar to the proposed Project, construction of Alternative 5 would not be out of character with the construction activities currently occurring within the Project area and would not result in a substantial change in views within the area. Under Alternative 5, similar screening and appropriate buffer mechanisms would be incorporated to reduce outside public views of construction activities. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a significant and unavoidable visual impact, including aesthetics and visual character, to the Theme Building as a result of the APM Guideway. However, as the same structures would be constructed under Alternative 5 as the proposed Project, this alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to aesthetics and visual resources. Impacts would remain significant and unavoidable.

Shading

Alternative 5 would implement all of the proposed Project components, which would have potential to cast shadows on surrounding uses. Similar to the proposed Project, shading impacts under Alternative 5 would be consistent with the existing character of the highly developed area, which contains many sources of shading. Based on the location of the closest shade-sensitive uses, Alternative 5 would not affect any shade-sensitive uses, similar to the proposed Project. Construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to shading. As all components under the proposed Project would also be constructed under Alternative 5, impacts with respect to shading would be the same under both the proposed Project and Alternative 5. Impacts would be less than significant.

Light and Glare

Alternative 5 would implement all of the proposed Project components and thus introduce new sources of light and glare to the Project site. Similar to the proposed Project, Alternative 5 would incorporate light sources including poles and fixtures along the APM guideway, building entrance and, walkway illumination, building mounted fixtures, roof perimeter lights, security lighting, street lighting, landscape lighting features, and signage lighting. These sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of a modern airport transportation area. Similar to the proposed Project, all construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. Alternative 5 would comply with the LAX Design Guidelines to minimize lighting spillover onto surrounding uses and would incorporate low-reflective materials to minimize any introduced sources of glare within the area. Alternative 5 would also adhere to LAMC requirements to reduce lighting and glare impacts and potential airport hazards. As discussed in Section 4.1, *Aesthetics*, the proposed Project would have a less than significant impact with respect to light and glare. As all components under the proposed Project would also be constructed under Alternative 5, impacts with respect to light and glare would be the same under both the proposed Project and Alternative 5. Impacts would be less than significant.

5.5.1.5.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants associated with construction-related activities with a significant and unavoidable impact with respect to regional emissions of VOC and NO_X, and to local concentrations of PM_{10}. The Increased TDM Program Alternative would result in the implementation of all the proposed Project components and would not change the physical components of any facilities. Therefore, construction emissions for this alternative would be the same as under the proposed Project. Thus, this alternative would have similar construction-related impacts from criteria air pollutant emissions.

Initially, operational emissions under Alternative 5 would not substantially differ from the proposed Project since all of the project elements would be constructed. However, as an increase in employees take advantage of the transit options available through a TDM program, vehicle miles traveled would decrease relative to that under the proposed Project. Therefore, operational impacts to both regional emissions and local concentrations would be less under the Increased Transportation Demand Management Program Alternative than under the proposed Project.

The Increased Transportation Demand Management Program Alternative would involve construction of all proposed Project components, and therefore, would have the same construction-related significant and unavoidable impacts with respect to PM_{10}, VOC, and NO_X emissions. With respect to operations, the Increased Transportation Demand Management Program Alternative would be less than the proposed Project with respect to regional emissions, as well as local concentrations impacts. However, the reduced operational emissions may not avoid or substantially reduce the significant impact that would occur under the proposed Project.

Human Health

As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. The Increased TDM Program Alternative would result in the implementation of all the proposed Project components and would not change the physical components of any facilities. Therefore, construction-related TAC emissions would be the same as under the proposed Project. Thus, this alternative would have similar construction-related impacts from TAC emissions and associated health risks.

Initially, operational emissions under Alternative 5 would not substantially differ from the proposed Project since all of the project elements would be constructed. However, as more employees take advantage of the transit options available through a TDM program, vehicle miles traveled would decrease relative to that under the proposed Project. Therefore, operational impacts to TAC emissions and associated risks would be less than under the proposed Project. Therefore, health risks impacts associated with the Increased Transportation Demand Management Program Alternative would be less than significant.

5.5.1.5.3 Biological Resources

The Increased TDM Program Alternative would result in the implementation of all the proposed Project components, but would assume a greater participation in the TDM Program. Implementation of the TDM program under Alternative 5 would not change the physical components of any facilities under the proposed Project. The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. Construction and operations of the components under Alternative 5 would result in similar impacts as the Project on street trees and nesting birds within the Project site. As compared to the proposed Project, Alternative 5 would not change the number of trees to be removed. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Incorporating the same standard control measures as mitigation measures into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to trees, raptors, and nesting birds and eggs. Impacts would be less than significant.

5.5.1.5.4 Cultural Resources

Under Alternative 5, all of the proposed Project components would be constructed; therefore, this alternative would include the demolition of existing buildings and introduction of new structures. Implementation of the TDM program under Alternative 5 would not result in different changes to the historic resources compared to the proposed Project. As with the proposed Project, Alternative 5 would not result in the demolition of any individually historic building; however, the demolition of the Administration Building could damage, destroy, or reduce the integrity or significance of the 1961 ATCT. Similar to the proposed Project, mitigation measures would be implemented under Alternative 5 to preserve the character-defining features of the 1961 ATCT in accordance with the Secretary of the Interior's Standards for Rehabilitation. As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a significant and unavoidable visual impact to the Theme Building as a result of the APM Guideway. Similar to the proposed Project, Alternative 5 would result in the introduction of the same structures that would reduce the level of visual prominence of the Theme Building within the CTA. Similar to the proposed Project, mitigation measures would be implemented under Alternative 5 to guide the preservation and future use of the Theme Building and to ensure that it is visually distinguished from the proposed new construction to maximize its level of visual prominence in the CTA. Development under Alternative 5 would also adhere to the architectural standards established within the LAX Design Guidelines to ensure visual compatibility of proposed Project with the Theme Building. However, the same structures as the proposed Project would be constructed under Alternative 5. Therefore, Alternative 5 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to historic resources.

As discussed in Section 4.4, *Cultural Resources*, the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. As compared to the proposed Project, Alternative 5 would result in the same amount of ground disturbance and the same potential to impact previously unknown buried archaeological resources, paleontological resources, and human remains. With incorporation of the same standard control measures as mitigation measures into Alternative 5, impacts with respect to archaeological resources, paleontological resources, and human remains would be less than significant.

5.5.1.5.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project would be less than either the Future Without Project scenarios in 2024 and 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project in 2024 and 2035, even with mitigation would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. The GHG emissions from the Increased Transportation Demand Management Program Alternative would be potentially less than those from the proposed Project, since an increased TMD Program should result in fewer vehicle trips into the Airport area. However, GHG impacts from the Increased Transportation Demand Management Program Alternative would likely remain significant and would not avoid or substantially reduce the significant impact that would occur under the proposed Project..

5.5.1.5.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

Under Alternative 5, all of the proposed Project components would be constructed; therefore, this alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. The demolition of buildings would have the potential to result in the exposure of ACMs or LBP. Excavation activities would also have the potential to encounter contaminated soils or groundwater from the known hazardous materials sites in the Project area. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As Alternative 5 would include construction of all proposed Project components, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Exposure of Workers to Hazardous Materials

Alternative 5 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. As such, excavation activities under Alternative 5 may result in previously unidentified soil and/or perched groundwater contamination to be encountered construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that that contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As Alternative 5 would include construction of all proposed Project components, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Alternative 5 would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. Alternative 5 would also introduce uses and activities on the Project site that would increase the use of hazardous materials and emissions. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Similar to the proposed Project, LAWA would still require acquisition of the existing Stella Middle Charter and Bright Star Secondary Charter Academies on the Manchester Square site. LAWA intends to acquire and relocate these schools prior to the commencement of construction activities. However, if the schools have not been relocated when columns for the APM guideway need to be erected, construction may occur within one-quarter mile of these schools. Construction activities would be limited to the APM columns, which would involve no or limited amounts of acutely hazardous material. Construction contractors would be required to handle, store, and use any hazardous construction materials in accordance with manufacturers' instructions and in compliance with the applicable standards and regulations described in Section 4.6.1.3. No other schools are located or proposed within one-quarter mile of the Project site. As such, no hazardous emissions or hazardous materials would occur within one-quarter mile of an existing or proposed school. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. As development of Manchester Square would still occur under Alternative 5, this alternative would have similar impacts to the proposed Project. Impacts would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

Alternative 5 would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, or the construction of new roadways and various roadway improvements. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of the Project components. However, construction of the various Project components may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. Mitigation would be implemented to ensure hazardous materials are properly disposed and to minimize interference with existing remediation efforts. As discussed in Section 4.6.1, *Hazardous Materials*, the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same measures into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

Alternative 5 would introduce new uses and activities and would alter ground access across the Project site. Traffic congestion associated with construction activities could impede the movement of emergency vehicles. While temporary, this increased traffic congestion could potentially delay emergency access throughout the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours, coordination of road closures, and the designation of busing and shuttles routes. As discussed in Section 4.6.2, *Safety Hazards*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same measures into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.1.5.7 Hydrology, Water Quality, and Groundwater

Similar to the proposed Project, Alternative 5 would require construction of new storm-drain systems, including retention basins used to retain the 10-year design storm. Construction activities under this alternative would involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Similar to the proposed Project, Alternative 5 would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. Incorporating the same mitigation measures and options for consideration for stormwater management would minimize surface water runoff and reduce degradation of surface water runoff and water quality for Alternative 5. As such, Alternative 5 would have the same impacts as the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.1.5.8 Land Use and Planning

Under Alternative 5, all of the proposed Project components would be constructed; therefore, this alternative would result in grading of the Project site, the demolition of existing buildings, introduction of new structures, and the construction of new roadways and various roadway improvements. Therefore, the same land uses would be constructed, and the policy and entitlement actions that are part of the Project would still occur. Additionally, this alternative would implement enhanced policy measures that would increase the use of transit by airport employees, consistent with the goals of the City's Mobility Plan 2035. As discussed in Section 4.8, *Land Use and Planning*, the proposed Project would have a less than significant impact related to land use and planning. As the land use changes under Alternative 5 would be the same as the proposed

Project, land use and planning under this alternative would have a similar impact as the proposed Project. Impacts would be less than significant.

5.5.1.5.9 Noise

Road Traffic Noise

Long-term operational noise generated by traffic under Alternative 5 would decrease when compared to the Project. This alternative assumes a greater employee participation in the TDM program when compared to the Project, approximately 20 percent of employees. Thus, long-term operational noise and traffic generated by traffic under this alternative would decrease when compared to the 5 percent of employee participation in the TDM program under the proposed Project. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed Project would have a less than significant impact. As Alternative 5 would have a decreased level of road traffic noise than the proposed Project, this alternative would have less impact than the proposed Project and impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Construction activities for Alternative 5 would be the same as for the proposed Project. As this alternative would still include construction of the CONRAC in close proximity to sensitive receptors, noise impacts from construction equipment would be similar to the proposed Project. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts under the proposed Project would be less than significant. Construction traffic noise and construction equipment vibration impacts under Alternative 5 would be similar to the proposed Project and would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. Incorporating similar mitigation measures, this alternative would have similar impacts to the proposed Project with respect to construction equipment noise. Impacts would be less than significant.

Transit Noise and Vibration

Under Alternative 5, construction and operations of the APM transit system would be the same as under the proposed Project. As discussed in Section 4.9.4, *Transit Noise and Vibration*, the proposed Project would have a less than significant impact. As the APM transit system would be the same under Alternative 5 as the proposed Project, transit noise and vibration under this alternative would have a similar impact as the proposed Project. Impacts would be less than significant.

5.5.1.5.10 Population and Housing

The Increased TDM Program Alternative would result in the implementation of all the proposed Project components; however, it would assume a greater participation in the TDM Program. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project. Similar to the proposed Project, Alternative 5 would not include residential development, but would displace the same nominal number of dwelling units to enable construction of the Project components. Implementation of the TDM program under Alternative 5 would not affect the amount of employment generated by the proposed Project. The increase in employee participation for the TDM Program would be from existing airport employees, and would not increase employment at the Airport. As such, employment generated under Alternative 5 would be similar compared to the proposed Project, and would be consistent with adopted growth forecasts or policies. As discussed in Section 4.10, *Population and Housing*, the proposed Project would have a less than significant impact on population and housing. As with the proposed Project, population and housing impacts under Alternative 5 would be less than significant.

5.5.1.5.11 Public Services

Fire Protection

Alternative 5 proposes the construction of all proposed Project components. As such, this alternative would result in a similar increase of uses that would generate a demand for fire protection services by passengers and employees. The participation of approximately 20 percent of airport employees in the proposed TDM program would not have a substantial change in demand for fire protection services compared to the proposed Project. Operation of the CONRAC would still occur, which would result in an increased volume of the use and storage of hazardous materials on the Project site. Similar to the proposed Project, Alternative 5 would place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area, compared to existing conditions. However, the handling and storage of hazardous materials under this alternative would comply with applicable federal, state, and local regulations to ensure spills and releases would not create a hazard to the public or the environment, thus reducing demand on LAFD Fire Station 95.

Construction activities under Alternative 5 would increase interim traffic congestion until all proposed Project elements are in place, which could impede LAFD's emergency response activities across the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAFD regarding road closures. Additionally, Alternative 5 would not result in a substantial increase in on-Airport population or land use changes that would require the need for new or expanded facilities, changes to fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. As discussed in Section 4.11.1, *Fire Protection*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to fire protection. Impacts would be less than significant.

Law Enforcement

Similar to the proposed Project, Alternative 5 would result in similar increase of uses that would generate a demand for police protection services by passengers and employees. The participation of approximately 20 percent of airport employees in the proposed TDM program would not have a substantial change in demand for law enforcement services compared to the proposed Project. Construction activities under Alternative 5 would increase traffic congestion, which could inhibit LAWAPD from meeting its response time requirements across the Project site. Implementation of mitigation similar to that for the proposed Project would address any traffic detours and coordination with LAWAPD regarding road closures. However, similar to the proposed Project, Alternative 5 could include the placement of a satellite LAWAPD facility office within proximity to the CONRAC or ITF East to maintain adequate response times across the Project site. Alternative 5 would incorporate various planned security features to reduce increased demand on LAWAPD, including but not limited to security fencing, surveillance cameras, security lighting, and emergency phones/call boxes. As such, Alternative 5 would not result in a substantial increase in on-Airport population or land use changes that would require a substantial increase in law enforcement services to maintain adequate services or require new or expanded facilities without providing adequate mechanisms for addressing these additional needs. As discussed in Section 4.11.2, *Law Enforcement*, the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same standard control measure and mitigation measure into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to law enforcement. Impacts would be less than significant.

Schools

The Increased TDM Program Alternative would result in the implementation of all the proposed Project components; however, it would assume a greater participation in the TDM Program. Therefore, the same facilities and infrastructure improvements would be constructed as under the proposed Project. However, similar to the proposed Project, Alternative 5 would not include residential development and would therefore not have a direct impact on student generation or demand for school services. However, under this alternative, LAWA would still require development of the Manchester Square area for the CONRAC. As such, the acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be required, resulting in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, Alternative 5 would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools.

5.5.1.5.12 Transportation / Traffic

On-Airport Traffic

Alternative 5 proposes the construction of all proposed Project components; however, it would assume a greater participation in the TDM Program. The increase in TDM participation would reduce overall trips to the Airport and therefore would result in less traffic congestion than the proposed Project. As such, on-Airport traffic would be slightly less under Alternative 5 as compared to the proposed Project. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. It is expected that Alternative 5 would have less impacts than the proposed Project with respect to on-Airport traffic, and therefore, impacts would be less than significant.

Off-Airport Traffic

Alternative 5 proposes the construction of all proposed Project components; however, it would assume a greater participation in the TDM Program by providing employees and passengers an enhanced set of transportation choices. This Integrated TDM would be powered by a web-based platform that would provide people with an economical mobility option, a positive guest experience, and a reliable and safe way to connect to and from work or air travel. The Integrated TDM alternative would involve the following strategic implementation approaches:

- Phase 1 – LAX and Adjacent Area Employee Mobility Choice Program
- Phase 2 – Passenger Mobility Choice Program

Future Horizon Year 2024

Implementation of the Phase 1 component of the Alternative 5 has the potential to reduce between 10 and 12 percent of the daily trips associated with the LAX area employee trips. Reduced daily trips to and from LAX would result in improved operating conditions, particularly at the study intersections located in the path of travel of the employees benefiting from the TDM Program. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a less than significant impact at all intersections with incorporation of mitigation. Incorporating similar measures, Alternative 5 would have similar impacts to the proposed Project with respect to off-Airport traffic. Impacts would be less than significant.

Future Horizon Year 2035

Implementation of the Phase 2 component (Passenger Mobility Choice Element) of Alternative 5 has the potential to reduce the daily trips associated with the LAX area employee and passenger trips by an additional amount beyond the 10 to 12 percent of the LAX area employment trips expected to be reduced by the mitigation measure that would be implemented in Phase 1. Alternative 5 would result in improved operating conditions, particularly at the study intersections located in the path of travel of the employees and passengers benefiting from the TDM Program. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have an unavoidable significant impact at one intersection that cannot be mitigated. Alternative 5 would have similar impacts to the proposed Project with respect to off-Airport traffic and would likely result in the same significant unavoidable impact.

Construction Traffic

The Increased TDM Program Alternative would result in the implementation of all the proposed Project components; however, it would assume a greater participation in the TDM Program. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project. As discussed in Section 4.12.3, *Construction Surface Transportation*, the proposed Project would have less than significant impacts with the incorporation of mitigation and a standard control measure. As construction activities proposed under Alternative 5 would be similar to that under the proposed Project's, this alternative would have a similar impact to the proposed Project on existing traffic conditions in the area. Impacts would be less than significant with the incorporation of mitigation and a standard control measure.

Construction activities and related construction vehicle trips associated with Alternative 5 would impact on- and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided. It is anticipated that construction of Alternative 5 would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Although impacts to traffic during construction would be less than under the proposed Project, impacts would remain significant even with incorporation of mitigation measures.

5.5.1.5.13 Utilities and Service Systems

Energy

Under Alternative 5, all of the proposed Project components would be constructed. Therefore, the same facilities and infrastructure improvements would be constructed as the proposed Project, but an increased TDM program would reduce the number of trips and thus, energy consumption. As such, energy demand for this alternative would be less than the proposed Project. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact on energy. As energy demand under Alternative 5 would be less than under the proposed Project, this alternative would have less impact to energy use as the proposed Project. Impacts would be less than significant.

Water

Under Alternative 5, all of the proposed Project components would be constructed. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. As Alternative 5 would include the complete CONRAC facility as the proposed Project, water use would be the similar. As discussed in Section 4.13.3, *Water*, the proposed Project would have a less than significant impact. As water use under Alternative 5 would be similar to that under the proposed Project, this alternative would have a similar impact to the proposed Project. Impacts would be less than significant.

5.5.1.5.14 Relationship to Proposed Project Objectives

Under the Increased TDM Alternative, all of the proposed Project components would be constructed. This alternative would meet all of the proposed Project's objectives listed above under Section 5.3.

5.5.1.6 Alternative 6, Reduced Potential Future Related Development Alternative

The Reduced Potential Future Related Development Alternative, Alternative 6, includes construction and operation of all proposed Project components. However, this alternative provides for less dense potential future related development after completion of construction of the proposed Project in 2030. As such, this alternative does not affect construction or operations of any proposed Project component from Phase 1 or Phase 2. Therefore, for LAMP project components, this alternative would have the same impacts for all resource categories when compared to the proposed Project.

Under the Reduced Potential Future Related Development, all of the proposed Project components would be constructed. Therefore, this alternative would meet all of the proposed Project's objectives listed above under Section 5.3.

5.5.2 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM POTENTIAL FUTURE RELATED DEVELOPMENT

Currently, LAWA has no specific plans for the parcels located adjacent to the CONRAC, ITF East, APM MSF, and ITF West that are proposed for potential future related development. While specific information related to construction of these parcels is not known, for purposes of this alternatives analysis, it was assumed that development of these parcels would consist of approximately 900,000 sf of commercial/office development, as described Section 2.7. The potential for environmental effects from future development of these parcels was examined at a programmatic level in this EIR. Development of these areas would occur after construction of the proposed components of the Project. At such time as individual development projects are proposed on these parcels, additional CEQA project-level environmental review would be conducted, as necessary.

5.5.2.1 Alternative 1, No Project Alternative

As discussed in Section 5.4.2.1, under the No Project Alternative, improvements associated with the proposed Project would not be constructed. No provisions for the APM and associated facilities, parking structures, CONRAC or roadway improvements would occur. The proposed Project areas would continue to be used for airport parking, existing roadways, existing private development, and other various uses at the site. It is expected that private parking operators would expand operations in order to capitalize on the expected growth in air passengers at LAX that would occur irrespective of the proposed Project. Rental car facilities are also expected to expand based on the projected passenger growth. As such, there would be no residual parcels available for potential future related development. Therefore, the analysis below assumes no development of Project- or Program-level components.

5.5.2.1.1 Aesthetics

Visual Character

Under the No Project Alternative, there would be no residual parcels from development of components under the proposed Project. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, land may be available for future development. Therefore, the existing visual character of the Project site in these areas would change. Under this alternative, it is expected that there would be an increase in off-Airport public parking facilities and rental car sites, which would be consistent with the existing visual character of the area. No development would occur to enhance the visual character of the Project site (e.g., modern facilities or landscaping elements). In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to visual character. The No Project Alternative may have less impact than the proposed Project but it is speculative to determine what would occur on these parcels if the No Project Alternative is enacted.

Shading

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Therefore, new structures may be constructed that could cause new or changed shading impacts in these areas. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to shading. The No Project Alternative may have less impact than the proposed Project but it is speculative to determine what would occur on these parcels if the No Project Alternative is enacted.

Light and Glare

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Future ambient lighting levels would most likely remain consistent with existing conditions. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to light and glare. The No Project Alternative may have less impact than the proposed Project but it is speculative to determine what would occur on these parcels if the No Project Alternative is enacted.

5.5.2.1.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, potential future related development under the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants; however, with the incorporation of mitigation, impacts would be less than significant. The No Project Alternative would not involve construction of the proposed Project or potential future related development; therefore, it would have no net increase in short-term and temporary emissions of criteria air pollutants.

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. Therefore, operational emissions under the No Project Alternative would be higher than under the proposed Project due to increased vehicle miles traveled from the absence of transportation-related improvements. The traffic increase under the No Project Alternative relative to the proposed Project is caused by the absence of project-level mobility elements. Therefore, operational impacts to both regional emissions and local concentrations would be higher under the No Project Alternative than under the proposed Project.

Nonetheless, as the No Project Alternative would not involve any construction of Project- or Program-level components, this alternative would result in less construction emissions than the proposed Project. With respect to operational emissions, the No Project Alternative would result in increased regional emissions, and would increase local concentrations impacts than under the proposed Project (see Section 4.2.1.8.2). Therefore, this alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to operational air quality emissions. The No Project Alternative may have less impact than the proposed Project with respect to construction-related emissions, but it is speculative to determine what would occur on these parcels if the No Project Alternative is enacted.

Human Health

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. As such, this alternative would not result in any increase in contaminants associated with construction activities. However, operational TAC emissions under the No Project Alternative would be higher than under the proposed Project due to increased vehicle miles traveled. The traffic increase relative to the proposed Project is caused by the reduced level of non-road mobility elements that are associated with the APM and CONRAC. Therefore, operational health risk impacts would be higher under the No Project Alternative than under the proposed Project.

Nonetheless, as the No Project Alternative would not involve any construction, it would not have the increased risks that would occur under the proposed Project with respect to construction-related TAC emissions. With respect to operational emissions, the No Project Alternative would result in increased TAC emissions, and would potentially increase risks due to this additional exposure above the levels found under the proposed Project (see Sections 4.2.2.4.1 and 4.2.2.7). As discussed in Section 4.2.2, *Human Health Risk Assessment*, construction of the proposed Project and potential future related development, would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. It is expected that due to the elimination of health risk associated with construction activities, impacts under the No Project Alternative would be less than significant.

5.5.2.1.3 Biological Resources

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. It is expected that private parking operators would expand operations in order to capitalize on the expected growth in air passengers at LAX that would occur irrespective of the proposed Project. Rental car facilities are also expected to expand based on the projected passenger growth. Therefore, the No Project Alternative would result in removal of trees and other ornamental vegetation for construction of new development.

Under the No Project Alterative, the existing ruderal and ornamental vegetation on the Project site would continue to grow, and the disturbed/developed land would largely remain the same. Similar to the potential future related development under the proposed Project, on-site native and nonnative trees and other ornamental vegetation could harbor raptor and other native bird nests and disturbing or destroying active bird nests is a violation of the MBTA. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. The No Project Alternative would have a less than significant impact to trees, raptors, and nesting birds and eggs with the incorporation of similar standard control measures.

5.5.2.1.4 Cultural Resources

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. Therefore, the No Project Alternative would not result in the demolition of any historic building, nor would it result in any activity that would damage, destroy, or reduce the integrity or significance of any historic resource. Furthermore, the No Project Alternative would not result in the introduction of new structures that would reduce the level of visual prominence of the Theme Building within the CTA, thus reducing its ability to convey its historical significance. As discussed in Section 4.4, *Cultural Resources*, potential future related development under the proposed Project would not result in significant impacts to historic resources. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. However, as no historic resources were identified near the residual parcels, the No Project Alternative would have a similar impact as the potential future related development under the proposed Project. Impacts to historical resources would be less than significant.

As discussed in Section 4.4, *Cultural Resources*, potential future related development under the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. However, as LAWA will continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. With the incorporation of similar standard control measures, the No Project Alternative would have a less than significant impact to archaeological resources, paleontological resources, and human remains.

5.5.2.1.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project and potential future related development would be less than the Future Without Project scenarios for 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project and potential future related development in 2035, even with mitigation, would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with the incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. As the GHG emissions from the No Project Alternative would be greater than those under the proposed Project, impacts would remain significant and unavoidable.

5.5.2.1.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Therefore, potential future related development projects may involve the demolition or alteration of buildings that may contain ACMs or LBP, and there would be a potential unauthorized or uncontrolled release of ACMs or LBP. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. The No Project Alternative would have similar impacts to the proposed Project and impacts would be less than significant.

Exposure of Workers to Hazardous Materials

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Major excavation activities that would have the potential to encounter contaminated soils or groundwater may still occur. As such, the No Project Alternative may expose construction workers to contaminated materials. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. Demolition or excavation activities would be limited to the removal of the remaining residential uses in Belford and Manchester Square under LAWA's ANMP and for the potential construction of other facilities. Therefore, this alternative would have a similar impact as the proposed Project potential future related development and impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. As such, there may be a slight increase in volume in the use and storage of hazardous materials on the Project site over existing conditions. However, LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction of these facilities, as well as the various airfield, terminal, landside, and miscellaneous improvements. Additionally, LAWA would still utilize the Manchester Square site for other landside improvements, including the relocation of the existing commercial vehicle holding lot. The acquisition of the site currently containing the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be required. As such, the implementation of these improvements would not occur until the two existing schools are relocated. No other schools are located or proposed within one-quarter mile of the Project site. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. The No Project Alternative would have similar impacts to the proposed Project. Impacts would be less than significant

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. It is expected that there would be an increase in off-Airport public parking facilities and rental car sites, which may be located on portions of the Project site. As such, there may be a slight increase in volume in the use and storage of hazardous materials on the Project site. Additionally, construction of the various improvements may interfere with known cleanup sites undergoing remediation. While such conflicts are not likely to occur, LAWA would ensure that the implementation of these improvements would not interfere with existing remediation efforts. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same measures into the No Project Alternative, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response or Emergency Evacuation Plans

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Access to hospitals, emergency response centers, school locations, communication facilities, highways and bridges, or airports would not change under the No Project Alternative. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and could degrade response times for emergency personnel over time. As discussed in Section 4.6.2, *Safety Hazards*, potential future related development under the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same measures into Alternative 5, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.2.1.7 Hydrology, Water Quality, and Groundwater

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Construction activities under this alternative would be reduced compared to the proposed Project potential future related development. As with the proposed Project potential future related development, construction activities for the No Project Alternative would involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Existing stormwater flows across the Project site would continue to occur. The existing hydrologic and drainage patterns would change based on new private parking and rental car facilities, but would not be substantially different than that under the proposed Project. Similar to the potential future related development under the proposed Project, the No Project Alternative would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, potential future related development under the proposed Project would have a less than significant impact related to hydrology with incorporation of mitigation measures. As the No Project Alternative could entail construction of new facilities, this alternative would have a similar, although reduced, impact as the proposed Project with incorporation of similar mitigation measures. As such, the No Project Alternative would have similar, although reduced, impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.2.1.8 Land Use and Planning

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. While the existing incompatible uses at Manchester Square and Belford would still be acquired and removed, the proposed uses under the proposed Project would not be constructed. In addition, under the No Project Alternative, plan amendments that are proposed under the Project would not occur. The existing LAX Plan specifically outlines the creation of a CONRAC and focused ground transportation facilities, which would not occur under the No Project Alternative. Additionally, the recently adopted 2016-2040 RTP/SCS identifies the proposed APM, ITFs, and CONRAC as ground access improvements at LAX that would support SCAG's regional planning policies and major initiative to improve airport access. As discussed in Section 4.8, *Land Use and Planning*, potential future related development under the proposed Project would have a less than significant impact related to land use and planning. However, as the No Project Alternative would not include the proposed Project components, including elements outlined in the LAX Plan and identified in the 2016-2040 RTP/SCS, this alternative would be inconsistent with the LAX Plan and would conflict with SCAG's regional planning goals and policies. Additionally, the No Project Alternative would include the construction of additional off-Airport parking facilities and rental car facilities rather than a CONRAC, which would be inconsistent with the goals of the LAX Plan, LAX Specific Plan, and the 2016-2040 RTP/SCS. Thus, land use and planning impacts would be significant.

5.5.2.1.9 Noise

Road Traffic Noise

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Without improvements to the roadway network, on-Airport traffic conditions would deteriorate in both horizon years 2024 and 2035. As discussed in Section 4.9.2, *Road Traffic Noise*, the proposed potential future related development would have a less than significant impact. However, as the level of service of on-Airport and off-Airport traffic would be reduced, it is expected that this alternative would have greater impacts than the proposed Project. However, roadway traffic under the No Project Alternative would not cause the ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase and road traffic noise impacts would remain less than significant.

Construction Traffic and Equipment Noise and Vibration

Under the No Project Alternative LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. Construction traffic and equipment noise and vibration associated with any future development in the Belford and Manchester Square areas could result in impacts to noise- and vibration-sensitive uses. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts from potential future related development under the proposed Project would be less than significant. Compared to the potential future related development under the proposed Project, the No Project Alternative would have reduced construction traffic noise and construction equipment vibration impacts; impacts would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. With the adoption of similar mitigation, construction equipment noise associated with the No Project Alternative would be less than significant.

Transit Noise and Vibration

Under the No Project Alternative, there would be no construction or operations of a transit system (i.e., the APM). As discussed in Section 4.9.4, *Transit Noise and Vibration*, potential future related development under the proposed Project would have a less than significant impact. As no transit system would be constructed under the No Project Alternative, there would be no transit noise and vibration impacts under this alternative.

5.5.2.1.10 Population and Housing

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. Similar to the proposed Project, this alternative would not include residential development; however, LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels.

The No Project Alternative would include expansion of private parking operators and rental car facilities that are expected to expand based on the projected passenger growth, which may be located on portions of the potential future related development sites. Additionally, commercial or industrial development of these parcels under the existing LAX Specific Plan would be allowed. While these facilities would generate some employment growth, it would not be inconsistent with adopted growth forecasts or policies. While several airport improvements would occur, these improvements would not generate a substantial increase in employment. All LAWA construction projects would comply with LAWA's existing PLA, which requires maximizing employment of qualified local persons residing within the local Los Angeles area. Any employees for projected development in this area would likely commute from the local Los Angeles area.

As discussed in Section 4.10, *Population and Housing*, potential future related development under the proposed Project would have a less than significant impact. Given the more limited development under the No Project Alternative, this alternative would have less impact on population and housing than the proposed Project. The No Project Alternative would have a less than significant impact on population and housing.

5.5.2.1.11 Public Services

Fire Protection

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed; as such, this alternative would not result in an increase of uses that would generate a demand for fire protection services by passengers or employees. The on-site demand for fire protection services would be similar to existing conditions and there would be a slight increased volume in the use and storage of hazardous materials on the Project site from expansion of public parking facilities and rental car sites. As such, the No Project Alternative would not place additional capacity constraints on LAFD Fire Station 95, the HazMat responder within the Project area. Although several airfield, terminal, landside, and miscellaneous improvements would occur under the No Project Alternative, construction and operation of these developments would not result in changes to the need for fire protection infrastructure, demand, or emergency access beyond the standards maintained by the agencies serving LAX and the surrounding communities. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and would subsequently affect LAFD's emergency response activities. As discussed in Section 4.11.1, *Fire Protection*, potential future related development under the proposed Project would have a less than significant construction-related impact with incorporation of mitigation and a standard control measure. However, as emergency response would be an operational impact under the No Project Alternative, this alternative would have greater impact on fire protection than the proposed Project. Impacts could be significant without incorporation of mitigation.

Law Enforcement

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. As such, this alternative could result in an increase of uses that would generate a demand for law enforcement services. Although several proposed airfield, terminal, landside, and miscellaneous improvements would occur under the No Project Alternative, construction and operation of these developments would not result in changes to the need for police officers or equipment, demand, or emergency access. However, without the proposed Project improvements, there would be an increase in traffic congestion and degradation of level of service throughout the existing street network. This increased traffic congestion would result from an increase in vehicles traveling to the CTA and would subsequently affect LAWAPD's emergency response activities. As discussed in Section 4.11.2, *Law Enforcement*, potential future related development under the proposed Project would have a less than significant construction-related impact with incorporation of mitigation and a standard control measure. However, as emergency response would be an operational impact under the No Project Alternative, this alternative would have greater impact on law enforcement than the proposed Project. Impacts could be significant without the incorporation of mitigation.

Schools

Similar to the proposed Project, the No Project Alternative would not include residential development and would therefore not have a direct impact on student generation or demand for school services. Under this alternative, LAWA would still utilize the Manchester Square site for other landside improvements, including the relocation of the existing commercial vehicle holding lot. As such, the existing Stella Middle Charter and Bright Star Secondary Charter Academies would still be acquired, resulting in a significant impact. Similar to the proposed Project, LAWA would implement mitigation to provide moving assistance to these two schools as part of any relocation effort. LAUSD would also be required to complete any required CEQA compliance prior to relocation of the schools to other sites to evaluate and mitigate significant impacts of the school relocation. However, as discussed in Section 4.11.3, *Schools*, the proposed Project may still result in a significant impact as mitigation would be required by a third party. Therefore, the No Project Alternative would not avoid or substantially reduce the significant impact that would occur under the proposed Project with respect to schools.

5.5.2.1.12 Transportation / Traffic

On-Airport Traffic

The No Project Alternative would not involve any of the construction activities associated with the development of the proposed Project, including roadway improvements or potential future related development. Therefore, the physical on-Airport roadway network would be consistent with existing conditions. Without improvements to the roadway network, on-Airport traffic conditions would deteriorate in future horizon years. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Off-Airport Traffic

The No Project Alternative would not involve any of the construction activities associated with the development of the proposed Project, including roadway improvements or potential future related development. Therefore, the physical roadway network would generally be consistent with existing conditions. However, six intersections would be improved independent of the proposed Project. These improvements were considered in analyzing impacts of the No Project Alternative. All intersections studied under the proposed Project were also analyzed for the No Project Alternative; these results are discussed in Section 5.5.1.1.12.

As discussed in Section 4.12.2, *Off-Airport Transportation*, potential future related development under the proposed Project would have a significant and unavoidable impact on one intersection and three freeway mainline segments. Under the No Project Alternative, it is expected that intersections would operate at a reduced level of service. The level of service of several roadway links and intersections would be reduced under the No Project Alternative; without the proposed Project improvements, traffic congestion would worsen in the vicinity of the Airport. Thus, traffic impacts are anticipated to be greater under the No Project Alternative.

Construction Traffic

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. 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 potential future related development with any facilities in these areas would occur. Due to the uncertainty of the type and timing of any development on the potential future related development parcels, it is speculative to assess whether the No Project Alternative would have a significant impact related to construction traffic. Each project would need to be evaluated to determine potential effects and any required mitigation.

5.5.2.1.13 Utilities and Service Systems and Energy

Energy

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. As such, new energy demands or infrastructure conflicts could occur. As discussed in Section 4.13.2, *Energy*, the proposed Project would have a less than significant impact. As energy demand under the No Project Alternative would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Water

Under the No Project Alternative, improvements associated with the proposed Project, and therefore the potential future related development, would not be constructed. However, LAWA would continue to acquire the remaining parcels in the Belford and Manchester Square areas as part of LAWA's ANMP, and some of this land may be available for future development. In addition, LAWA would not enact amendments to the LAX Plan and LAX Specific Plan that would limit the allowable development on the residual parcels. As such, new utility demands or infrastructure changes could occur. Under the proposed Project, the majority of the water and wastewater demand is attributable to the CONRAC. Under the No Project Alternative, car rental activities, including but not limited to car washing, would still occur at existing and expanded facilities dispersed around the Airport. As these activities would not be consolidated as proposed under the Project, usage would increase for future horizon years based on activity growth. Therefore, the No Project Alternative would have a greater impact on water demand than the proposed Project; however, impacts would be less than significant.

5.5.2.1.14 Relationship to Proposed Project Objectives

The No Project Alternative would not provide for development of a CONRAC at LAX, ITFs, an APM or associated facilities, or roadway improvements. 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, the No Project Alternative would not meet any of the proposed Project's objectives listed above under Section 5.3. Specifically, the No Project Alternative would not meet the proposed Project's objective to provide new access options to LAX, including a direct connection to transit and easier and more efficient access to rental cars. The No Project Alternative would not provide for facilities necessary to relieve congestion in the CTA and on the surrounding street system. The No Project Alternative would also not promote the sustainability of LAX by improving efficiency and operations of the surface transportation system, nor would it enhance and integrate new facilities with existing structures, both inside and outside the CTA.

5.5.2.2 Alternative 2, No APM Alternative

Alternative 2, the No APM Alternative, would eliminate the APM system, including the guideway, stations, pedestrian walkways, and APM MSF. However, this alternative would not affect the location, scale, or timing of the potential future related development. Thus, this alternative would have similar impacts for all resource categories when compared to potential future related development as part of the proposed Project.

5.5.2.3 Alternative 3, Reduced Phase 1 Roadway Improvements Alternative

Alternative 3, Reduced Phase 1 Roadway Improvements Alternative, would only change the phasing of Project-level components from Phase 1 to Phase 2, and therefore would not affect the location, scale, or timing of the potential future related development. Thus, this alternative would have similar impacts for all resource categories when compared to potential future related development as part of the proposed Project.

5.5.2.4 Alternative 4, One ITF Parking Structure Alternative

Alternative 4, the One ITF Parking Structure Alternative, would omit the construction of one ITF public parking garage, thereby reducing the number of parking spaces at the ITF East. However, these changes would not affect the location, scale, or timing of the potential future related development. Thus, this alternative would have similar impacts for all resource categories when compared to potential future related development as part of the proposed Project.

5.5.2.5 Alternative 5, Increased Transportation Demand Management Program Alternative

Alternative 5, the Increased Transportation Demand Management Program Alternative, would only change the transportation mode of employees accessing the Airport, and therefore would not affect the location, scale, or timing of the potential future related development. Thus, this alternative would have similar impacts for all resource categories when compared to potential future related development as part of the proposed Project.

5.5.2.6 Alternative 6, Reduced Potential Future Related Development Alternative

The Reduced Potential Future Related Development Alternative, Alternative 6, is a fully integrated alternative that includes all Project components, including construction and operations of all proposed components under Phase 1 and Phase 2. However, this alternative provides for 50 percent less potential future related development after completion of construction of the proposed Project in 2030 (a total of 450,000 sf versus 900,000 sf, as identified in Table 5-3). Therefore, this alternative would have the same Project-level impacts for all resource categories. The discussion below identifies any change to impacts identified for only the potential future related development, studied at a Programmatic level in this EIR. While there are no specific plans for development at this time, when development projects are proposed, additional CEQA project-level environmental review would be conducted, as necessary.

5.5.2.6.1 Aesthetics

Visual Character

The Reduced Potential Future Related Development Alternative would permit similar uses as the potential future related development under the proposed Project, although at a smaller scale. As such, construction and full operation of the components under Alternative 6 would result in similar changes to the visual character of the Project site compared to the proposed Project. As with the proposed Project, development under Alternative 6 would comply with FAA height restrictions and would not interfere with Airport operations. Development under Alternative 6 would also adhere to the architectural and landscaping standards established within the LAX Design Guidelines and the Century Boulevard Streetscape Plan to ensure consistency with the surrounding visual character. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to visual character. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to visual character. Impacts would be less than significant.

Shading

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. In accordance with the LAX Design Guidelines, building heights, setbacks, and buffers would be similar to those of the proposed Project. Therefore, Alternative 6 would result in similar shading impacts on shade-sensitive uses compared to potential future related development under the proposed Project, which would be consistent with the existing character of the highly developed area. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to shading. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to shading. Impacts would be less than significant.

Light and Glare

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. However, as development of these parcels would still occur, albeit on a smaller scale, lighting associated with development under Alternative 6 would still be introduced to the Project site. These new sources of lighting would not be out of character with the surrounding area, as they would be consistent with sources of lighting typical of the highly developed area. Similar to potential future related development under the proposed Project, all construction activities would be confined to the designated staging areas and would incorporate various screening and other appropriate buffer mechanisms to minimize shading impacts on surrounding uses. Alternative 6 would comply with the LAX Design Guidelines to minimize lighting spillover onto surrounding uses and would incorporate low-reflective materials to minimize any introduced sources of glare within the area. Alternative 6 would adhere to LAMC requirements to reduce lighting and glare impacts and potential Airport hazards. As discussed in Section 4.1, *Aesthetics*, potential future related development under the proposed Project would have a less than significant impact with respect to light and glare. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to light and glare. Impacts would be less than significant.

5.5.2.6.2 Air Quality and Human Health

Air Quality

As discussed in Section 4.2.1, *Air Quality*, potential future related development under the proposed Project would result in a net increase in short-term and temporary emissions of criteria air pollutants; however, with the incorporation of mitigation, impacts would be less than significant. Alternative 6 would result in 50 percent less construction of potential future related development than under the proposed Project; therefore, it would have reduced short-term and temporary emissions of criteria air pollutants as compared to the proposed Project.

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. Therefore, operational emissions under this alternative would be substantially lower than under the proposed Project due to reduced overall square footage. As discussed in Section 4.2.1, *Air Quality*, potential future related development under the proposed Project would result in a significant impact to both regional and localized operation impacts with incorporation of mitigation. As emissions under the proposed Project only slightly exceed thresholds, it is expected that Alternative 6 would reduce operational emissions to a less than significant level. Therefore, this alternative would avoid the significant impact that would occur under the proposed Project with respect to operational emissions.

Human Health

As discussed in Section 4.2.2, *Human Health Risk Assessment*, the proposed Project would result in a net increase in risks due to exposure to TACs associated with construction-related activities, although mitigated levels would be less than significant. Alternative 6 would result in 50 percent less construction of potential future related development than under the proposed Project; therefore, it would have reduced TAC emissions as compared to the proposed Project. Thus, this alternative may result in slightly lower long-term risks.

Development of 50 percent less square footage of potential future related development would result in a proportional reduction in operational TAC emissions. Therefore, operational TAC emissions associated with potential future related development would be substantially reduced under Alternative 6 when compared to the proposed Project. However, impacts are analyzed cumulatively with the proposed Project components. As such, operational impacts to both long-term (cancer and chronic non-cancer) and acute risks under the Reduced Potential Future Related Development Alternative are expected to be similar to the proposed Project. Therefore, health risks impacts associated with the Reduced Potential Future Related Development Alternative would be less than significant.

5.5.2.6.3 Biological Resources

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. The Project site does not include native habitat areas that are used for movement by migratory fish or wildlife species, nor that are part of a wildlife corridor between large open space areas or that contain wildlife nursery sites. As compared to the proposed Project, Alternative 6 would not substantially change the number of trees to be removed. As discussed in Section 4.3, *Biological Resources*, with incorporation of standard control measures as mitigation measures, the proposed Project would have a less than significant impact on nesting birds/raptors. Incorporating the same standard control measures as mitigation measures into Alternative 6, this alternative would have similar impacts to the proposed Project with respect to trees, raptors, and nesting birds and eggs. Impacts would be less than significant.

5.5.2.6.4 Cultural Resources

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. There are no historic resources located in or immediately adjacent to these areas. As such, similar Alternative 6 would not result in an activity that could damage, destroy, or reduce the integrity or significance of any historic resource. As discussed in Section 4.4, *Cultural Resources*, potential future related development under the proposed Project would not result in significant impacts to historic resources. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to cultural resources. Impacts would be less than significant.

As discussed in Section 4.4, *Cultural Resources*, potential future related development under the proposed Project would have a less than significant impact on archaeological resources, paleontological resources, and human remains with the incorporation of standard control measures as mitigation measures. As compared to the proposed Project, Alternative 6 would most likely require less area of ground disturbance which would result in reduced potential to impact previously unknown buried archaeological resources, paleontological resources, and human remains. With incorporation of the same standard control measures as mitigation measures into Alternative 6, impacts with respect to archaeological resources, paleontological resources, and human remains would be less than significant.

5.5.2.6.5 Greenhouse Gas Emissions

As discussed in Section 4.5.8, *Greenhouse Gas Emissions*, GHG emissions under the proposed Project and potential future related development would be less than the Future Without Project scenarios for 2035, and would be less than the 2015 existing conditions. However, the GHG emissions levels associated with future operation of the proposed Project and potential future related development in 2035, even with mitigation, would not meet the numerical targets for GHG reductions in the future that are reflected in state, regional, and local plans adopted for the purpose of reducing the emissions of GHGs. Therefore, even with the incorporation of mitigation, the proposed Project was found to have significant and unavoidable impacts with respect to GHG emissions. Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project; therefore, GHG emissions under this alternative would be substantially lower than under the proposed Project due to reduced overall square footage. However, the exceedance of the per capita efficiency threshold is greater than 2 times the threshold per year per employee. Although the GHG emissions from the Reduced Potential Future Related Development Alternative would be lower than those under the proposed Project, impacts would remain significant and unavoidable.

5.5.2.6.6 Hazards and Hazardous Materials

Unauthorized and Uncontrolled Release of a Hazardous Material

Under Alternative 6, potential future related development would be reduced by 50 percent. Development could include activities or subterranean elements that could result in the accidental release of hazardous materials, including contaminated soil, groundwater, or other hazardous materials. However, there would be no remaining buildings on these parcels that could potentially release ACMs or LBP during demolition activities. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to unauthorized and uncontrolled release of a hazardous material. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to hazardous materials. Impacts would be less than significant.

Exposure of Workers to Hazardous Materials

Alternative 6 would result in development of up to 450,000 square feet of commercial development. As such, excavation activities under Alternative 6 may result in previously unidentified soil and/or perched groundwater contamination that could be encountered during construction activities. However, LAWA would comply with OSHA and Cal/OSHA requirements to minimize expose of construction workers to contaminated materials. Compliance with these requirements would ensure that any contaminated materials encountered or generated during construction are properly identified, stored, remediated, and disposed of. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to exposing workers to hazardous materials. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to hazardous materials. Impacts would be less than significant.

Hazardous Emissions and Materials within One-Quarter Mile of Existing or Proposed Schools

Alternative 6 would involve construction activities that would temporarily increase the amount of hazardous materials on the Project site. However, these materials would be used and stored in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. Furthermore, it is unlikely that any schools would be located or proposed within one-quarter mile of the areas of potential future related development by the time of development. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with respect to the release of hazardous emissions or materials within a one-quarter mile of an existing or proposed school. Impacts under Alternative 6 would be similar to the proposed Project and would be less than significant.

Contaminated Soils, Groundwater, and Other Hazardous Materials, or Prevention of Cleanup Sites Undergoing Remediation

Alternative 6 would result in the introduction of new structures at the Project site. LAWA would ensure specific procedures for handling hazardous materials are adhered to prevent spills during construction activities. However, construction activities may result in contamination of soil or groundwater due to spill or release of hazardous materials or interference with known cleanup sites undergoing remediation. Mitigation would be implemented to ensure hazardous materials are properly disposed and to minimize interference with existing remediation efforts. Alternative 6 would have similar less than significant impacts on contamination of soil or groundwater due to spill or release of hazardous materials or prevention of cleanup sites undergoing remediation and would be less than significant. As discussed in Section 4.6.1, *Hazardous Materials*, potential future related development under the proposed Project would have a less than significant impact with incorporation of standard control measures. Incorporating the same measures into Alternative 6, this alternative would have similar impacts to the proposed Project with respect to remediation efforts affected by construction. Impacts would be less than significant.

Interference with Emergency Response Plans

Alternative 6 would introduce new uses and activities at the Project site. However, as compared to full buildout of potential future related development under the proposed Project, the 50 percent reduction of the potential future related development under Alternative 6 may further reduce traffic congestion. As such, the improved traffic flow under Alternative 6 would improve response times for emergency personnel and would not interfere with an adopted emergency response or emergency evacuation plan. As discussed in Section 4.6.2, *Safety Hazards*, potential future related development under the proposed Project would have a less than significant impact with incorporation of mitigation and a standard control measure. Incorporating the same measures into Alternative 6, this alternative would have similar impacts to the proposed Project with respect to emergency response and evacuation plans. Impacts would be less than significant.

5.5.2.6.7 Hydrology, Water Quality, and Groundwater

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. Although construction activities for the potential future related development under this alternative would be reduced when compared to the proposed Project, construction of this alternative would still involve temporary surface water runoff and water quality impacts. Adherence to the SWPPP and implementation of standard BMPs during construction would assure that construction-related siltation and erosion, impacts, as well as other water quality impacts from construction runoff, would be less than significant. Similar to the proposed Project potential future related development, Alternative 6 would result in a decrease in the volume of surface recharge within the Project area when compared to existing conditions; however, the reduction in surface recharge would not substantially change the groundwater storage or groundwater elevation beneath the Project site and groundwater impacts would be less than significant. As discussed in Section 4.7, *Hydrology, Water Quality, and Groundwater*, potential future related development under the proposed Project would have a less than significant impact with incorporation of mitigation measures. Incorporating similar measures and options for consideration for stormwater management would minimize surface water runoff and reduce degradation of surface water runoff and water quality of Alternative 6. As such, Alternative 6 would have similar impacts to the proposed Project with respect to water quality and groundwater (less than significant) and hydrology (less than significant after mitigation).

5.5.2.6.8 Land Use and Planning

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. Under this alternative, the LAX Specific Plan would allow a lesser level of development within the Airside Support subarea. This alternative assumes that half as much development would be permitted as compared to the proposed Project (i.e., approximately 450,000 square feet total of commercial development rather than the 900,000 square feet total assumed as part of the proposed Project). However, the density of development projected for these sites do not constitute a significant impact. As such, the land use impacts of this alternative would be similar to those of the proposed Project. As discussed in Section 4.8, *Land Use and Planning*, potential future related development under the proposed Project would have a less than significant impact related to land use and planning. Therefore, impacts with respect to land use and planning under Alternative 6 would be less than significant.

5.5.2.6.9 Noise

Road Traffic Noise

Long-term operational noise generated by traffic under this alternative would decrease when compared to the potential future related development under the proposed Project. Due to the reduced future development, traffic trips would be reduced and would result in an incremental reduction in roadway noise when compared to potential future related development under the proposed Project. As such, road traffic noise under this alternative would be similar, but incrementally less than the Project. Impacts would be less than significant.

Construction Traffic and Equipment Noise and Vibration

Construction activities for the Reduced Potential Future Related Development Alternative would be reduced as compared to the proposed Project as this alternative includes 50 percent less development than under the proposed Project. While construction under this alternative would be reduced in scale and duration due to the reduced intensity of future related development, construction would still occur in Manchester Square in close proximity to receptors sensitive to noise and vibration from construction traffic and equipment. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, construction traffic noise and construction equipment vibration impacts from the potential future related development under the proposed Project would be less than significant. Compared to the potential future related development under proposed Project, this alternative would have reduced construction traffic noise and construction equipment vibration impacts; impacts would be less than significant. As discussed in Section 4.9.3, *Construction Traffic and Equipment Noise and Vibration*, the potential future related development under the proposed Project would have less than significant construction equipment noise impacts with implementation of mitigation and a standard control measure. Compared to the proposed Project, this alternative would have reduced construction equipment noise impacts; however, impacts would remain potentially significant. With the adoption of similar mitigation, construction equipment noise associated with this alternative would be less than significant.

Transit Noise and Vibration

Alternative 6 would result in 50 percent less square footage of potential future related development than under the proposed Project. Similar to the proposed Project, no additional transit noise or vibration would be generated by the potential future related development under Alternative 6. As discussed in Section 4.9.4, *Transit Noise and Vibration*, potential future related development under the proposed Project would have a less than significant impact. Impacts under Alternative 6 would be similar to the proposed Project and would be less than significant.

5.5.2.6.10 Population and Housing

The Reduced Potential Future Related Development Alternative would result in 50 percent reduction of potential future related development. The reduction of 450,000 square feet of commercial development on Project site would result in a 50 percent reduction of generated employment as compared to potential future related development under the proposed Project. As such, Alternative 6 would result in a reduction in the total employment generated compared to the proposed Project, and would be consistent with adopted growth forecasts or policies. As discussed in Section 4.10, *Population and Housing*, potential future related development under the proposed Project would have a less than significant impact on population and housing. Alternative 6 would have similar less than significant indirect impacts related to causing or accelerating population or housing growth compared to the proposed Project. Impacts would be less than significant.

5.5.2.6.11 Public Services

Fire Protection

The 50 percent reduction of potential future related development would generate a reduced demand for fire protection services by passengers and employees as compared to the proposed Project. Developers of all potential future related development would be required to coordinate with the LAFD, incorporate fire safety features, and comply with fire and building code requirements. As discussed in Section 4.11.1, *Fire Protection*, potential future related development under the proposed Project would have a less than significant impact. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to fire protection. Impacts would be less than significant.

Law Enforcement

The 50 percent reduction of potential future related development would generate a reduced demand for law enforcement services by passengers and employees as compared to the proposed Project. Developers of all potential future related development would be required to coordinate with LAWAPD and incorporate planned security features to reduce increased demand on local law enforcement. As discussed in Section 4.11.2, *Law Enforcement*, potential future related development under the proposed Project would have a less than significant impact. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect to law enforcement. Impacts would be less than significant.

Schools

Alternative 6 would not include residential development and would therefore not have a direct impact on student generation or demand for school services. While residential uses are not proposed by the potential future related development, the increase in the number of employees might indirectly generate students and a demand for school services. However, similar to the proposed Project, these new employees would likely be drawn from the Los Angeles regional area and would not require relocation of residency or development of new school facilities. Additionally, all individual development projects would be required, as necessary, to pay mandatory developer fees pursuant to California Education Code, Section 17620 or Government Code Section 65970 to offset any increased demands on local schools. As discussed in Section 4.11.3, *Schools*, potential future related development under the proposed Project would have a less than significant impact. As less development would be constructed under Alternative 6, this alternative would have less impact than the potential future related development under the proposed Project with respect schools. Impacts would be less than significant.

5.5.2.6.12 Transportation / Traffic

On-Airport Traffic

The Reduced Potential Future Related Development Alternative would result in 50 percent reduction of potential future related development. However, the potential future related development would have no effect on on-Airport traffic. As such, on-Airport traffic would be the same under Alternative 6 as compared to the proposed Project. As discussed in Section 4.12.1, *On-Airport Transportation*, the proposed Project would have a less than significant impact to the on-Airport intersections and roadway links. It is expected that Alternative 6 would have the same impacts as the proposed Project with respect to on-Airport traffic, and therefore, impacts would be less than significant.

Off-Airport Traffic

The Reduced Potential Future Related Development Alternative would result in 50 percent reduction of potential future related development. Details regarding assumptions for this alternative with respect to off-Airport traffic are outlined in Appendix O.

Under Alternative 6, traffic in the study area would generally be consistent with the proposed Project, as identified in **Table 5-14**. As shown, this alternative would cause a significant traffic impact at 4 locations during the morning peak hour; at 5 locations during the midday peak hour; and at 7 locations during the evening peak hours. Overall, Alternative 6 would significantly impact 9 intersections compared to 11 intersections under the proposed Project and potential future related development. As discussed in Section 4.12.2, *Off-Airport Transportation*, the proposed Project would have a significant impact at 1 intersection that cannot be mitigated. Alternative 6 would have similar impacts to the proposed Project with respect to off-Airport traffic. Impacts would be significant and unavoidable.

[Draft]

Table 5-14: Alternative 6 Off-Airport Traffic Impacts

	AM PEAK HOUR		MIDDAY PEAK HOUR [1/]		PM PEAK HOUR	
LEVEL OF SERVICE	REDUCED FUTURE RELATED DEVELOPMENT ALTERNATIVE	PROPOSED PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT	REDUCED FUTURE RELATED DEVELOPMENT ALTERNATIVE	PROPOSED PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT	REDUCED FUTURE RELATED DEVELOPMENT ALTERNATIVE	PROPOSED PROJECT AND POTENTIAL FUTURE RELATED DEVELOPMENT
A	22	19	8	7	23	23
B	26	28	11	12	14	14
C	34	35	7	7	28	27
D	44	41	6	6	34	34
E	35	37	2	2	39	38
F	22	23	2	2	45	47
Total	183	183	36	36	183	183
Significant Impacts	4	5	5	5	7	8

NOTE:

1/ As discussed in Section 4.12.2.2, Methodology, only select intersections were studied for the midday peak hour.

SOURCE: Raju Associates, Inc., *Draft Transportation Study for the Landside Access Modernization Program DEIR*, September 2016. (Appendix O of this EIR)
PREPARED BY: Ricondo and Associates, Inc., September 2016.

Construction Traffic

Construction activities for the Reduced Potential Future Related Development Alternative would be reduced as compared to the proposed Project as this alternative includes 50 percent less square footage of potential future related development than under the proposed Project. As construction under this alternative would be reduced in scale and duration due to the reduced intensity of future related development, it is expected that traffic impacts would be reduced as well. Due to the uncertainty of the type and timing of any development on the potential future related development parcels, it is uncertain whether this alternative would have a significant impact related to construction traffic. Each project would need to be evaluated to determine potential effects and any required mitigation. When comparing this alternative to the proposed Project, the Reduced Potential Future Related Development Alternative would have less impacts than the proposed Project.

Construction activities and related construction vehicle trips associated with Reduced Potential Future Related Development Alternative would impact on- and off-Airport traffic roadway operations. To the extent that Project-related construction would require temporary lane closures and detours, off-Airport traffic conditions could be impacted. In addition to lane and roadway restrictions, it is anticipated that crosswalks, bike paths, and pedestrian pathways may be restricted or closed for a period of time; alternate routes would be provided.

It is anticipated that construction of Reduced Potential Future Related Development Alternative would result in the loss of regular vehicular or pedestrian access to some facilities for more than one day and/or result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the Project area. Although impacts to traffic during construction would be less than under the proposed Project, impacts would remain significant even with incorporation of mitigation measures.

5.5.2.6.13 Utilities and Service Systems

Energy

Under Alternative 6, the density of future development would be reduced by 50 percent. Therefore, the future electrical demand associated with the future development would be proportionally reduced. As such, energy demand for this alternative would be reduced as compared to the proposed Project. As discussed in Section 4.13.2, *Energy*, potential future related development under the proposed Project would have a less than significant impact on energy. As energy demand under Alternative 6 would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

Water

Under Alternative 6, the density of future development would be reduced by 50 percent. Therefore, the future demand for water and sewer services associated with the future development would be proportionally reduced. As such, water and sewer services for this alternative would be reduced as compared to the proposed Project. As discussed in Section 4.13.3, *Water*, potential future related development under the proposed Project would have a less than significant impact on water. As water use and sewer services under Alternative 6 would be reduced as compared to the proposed Project, this alternative would have less impact than the proposed Project. Impacts would be less than significant.

5.5.2.6.14 Relationship to Proposed Project Objectives

Under Alternative 6, all of the proposed Project components would be constructed, but the density of the potential future related development would be reduced by 50 percent. This alternative would meet most of the proposed Project's objectives listed above under Section 5.3, except it would not meet LAWA's obligation to comply with FAA grant obligations to ensure the highest and best use for conversion of any potential future surplus property.

5.6 Environmentally Superior Alternative

Section 15126.6(e)(2) of the 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 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

Draft EIR, the range of potentially feasible alternatives includes the No Project Alternative, the No APM Alternative, the Reduced Phase 1 Improvements Alternative, the One ITF Parking Structure Alternative, the Increased Transportation Demand Management Program Alternative, and the Reduced Future Related Development Alternative. Impacts related to these alternatives for the proposed Project are shown in **Table 5-15**; impacts related to these alternatives for the proposed Program (potential future related development) are shown in **Table 5-16**.

The No Project Alternative is considered to be the overall environmentally superior alternative as it would avoid all construction impacts of the proposed Project and is the only alternative that would not have a significant unavoidable impact with respect to construction-related regional VOC and NOx emissions, construction related local concentrations of PM_{10} emissions, and operations-related local concentrations of PM_{10} emissions. The No Project Alternative would also not have a significant unavoidable impact with respect to visual character and historic resources. However, this alternative would not meet any of the objectives established for the proposed Project.

In accordance with the State CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative, a comparative evaluation of the remaining alternatives indicates that the No APM Alternative would be the environmentally superior alternative relative to the other alternatives. Without the APM guideway, the No APM Alternative would result in less construction related impacts to air quality, greenhouse gases, and construction surface transportation. However, the proposed Project would result in fewer vehicle miles traveled and thus, less GHG emissions.

It is important to note, while the No APM Alternative is considered the environmentally superior alternative, it would not avoid the significant unavoidable impacts that would occur under the proposed Project with respect to construction- or operational-related emissions, greenhouse gas emissions or off-airport traffic impacts. Additionally, the proposed Project would result in fewer vehicle miles traveled and thus, less GHG emissions. However, the environmentally superior No APM Alternative would eliminate the significant and unavoidable impacts to visual resources of the Theme Building and cultural resources.

The One ITF Alternative would result in greater environmental impacts compared to the proposed Project. Most notably, in comparison to the other alternatives and the proposed Project, the One ITF Alternative would result in significant impacts to land use and planning in terms of plan consistency. The One ITF Alternative would incrementally reduce some of the less than significant impacts of the proposed Project related to aesthetics (shading and light and glare), air quality (construction), hazards and hazardous materials, and energy. Impacts to aesthetics (visual character), air quality, cultural resources, greenhouse gas emissions, public services (schools), and off-Airport traffic would be similar as the proposed Project and it would not reduce the significant unavoidable impacts that would occur under the proposed Project with respect to these areas.

[Draft]

Table 5-15 (1 of 3): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Aesthetics							
Visual Character	Significant and Unavoidable	**Less than significant**	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Shading	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Light and Glare	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Air Quality and Human Health							
Air Quality							
Construction	Significant and Unavoidable	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Operations	Significant and Unavoidable	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Human Health							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Biological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Cultural Resources							
Historic Resources	Significant and Unavoidable	**Less than significant**	**Less than significant**	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Archaeological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Paleontological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Human Remains	Less than significant	Less than	Less than significant	Less than significant	Less than significant	Less than significant with	Less than significant

[Draft]

Table 5-15 (2 of 3): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Greenhouse Gas Emissions							
No Net Increase (quantifiable)	Less than Significant	No impact	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Plan/Policy Consistency	Significant and Unavoidable	Significant	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazards and Hazardous Materials							
Unauthorized and Uncontrolled Release	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Exposure of Workers	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Hazardous Emissions and Materials within ¼-mile of School	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Interfere with Ongoing Remediation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Interfere with Emergency Response or Emergency Evacuation Plan	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Hydrology, Water Quality, and Groundwater	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Land Use and Planning	Less than significant	Significant and Unavoidable	Significant and unavoidable	Less than significant	Significant and Unavoidable	Less than significant	Less than significant
Noise							
Road Traffic Noise	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Construction Traffic and Equipment Noise and Vibration	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Transit Noise and Vibration	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Population and Housing	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant

[Draft]

Table 5-15 (3 of 3): Significant Impacts of the Proposed Project Alternatives (Phase 1 and Phase 2)

RESOURCE CATEGORY	PROPOSED PROJECT	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Public Services							
Fire Protection	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Law Enforcement	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Schools	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Transportation/Traffic							
On-Airport Traffic	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Off-Airport Traffic	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable	2024 - Less than significant with mitigation 2035 - Significant and unavoidable
Construction Traffic	Significant and unavoidable	Less than significant	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Utilities and Service Systems and Energy							
Energy	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Water	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

[Draft]

Table 5-16 (1 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Aesthetics							
Visual Character	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Shading	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Light and Glare	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Air Quality and Human Health							
Air Quality							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Less than significant with mitigation
Human Health							
Construction	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Operations	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Biological Resources	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Cultural Resources							
Historic Resources	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Archaeological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Paleontological Resources	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Human Remains	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Greenhouse Gas Emissions							
Per Capita Efficiency Threshold	Significant and Unavoidable	No impact	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Plan/Policy Consistency	Significant and Unavoidable	Significant	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable

[Draft]

Table 5-16 (2 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Hazards and Hazardous Materials							
Unauthorized and Uncontrolled Release	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Exposure of Workers	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Hazardous Emissions and Materials within ¼-mile of School	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Interfere with Ongoing Remediation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Interfere with Emergency Response or Emergency Evacuation Plan	Less than significant	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Hydrology, Water Quality, and Groundwater	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Land Use and Planning	Less than Significant	Significant and unavoidable	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Noise							
Road Traffic Noise	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Construction Traffic and Equipment Noise and Vibration	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation	Less than significant with mitigation
Transit Noise and Vibration	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

[Draft]

Table 5-16 (3 of 3): Significant Impacts of the Proposed Program Alternatives (Potential Future Related Development)

RESOURCE CATEGORY	PROPOSED PROGRAM	ALTERNATIVE 1: NO PROJECT	ALTERNATIVE 2: NO APM	ALTERNATIVE 3: REDUCED PHASE 1 IMPROVEMENTS	ALTERNATIVE 4: ONE ITF PUBLIC PARKING GARAGE	ALTERNATIVE 5: INCREASED TDM PROGRAM	ALTERNATIVE 6: REDUCED POTENTIAL FUTURE RELATED DEVELOPMENT
Population and Housing	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Public Services							
Fire Protection	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than Significant
Law Enforcement	Less than significant	Less than significant with mitigation	Less than significant	Less than significant	Less than significant	Less than significant	Less than Significant
Schools	Less than significant	Significant and unavoidable	Less than significant	Less than significant	Less than significant	Less than significant	Less than significant
Transportation/ Traffic							
On-Airport Traffic	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Off-Airport Traffic	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Construction Traffic	Significant and unavoidable	Less than significant	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
Utilities and Service Systems and Energy							
Energy	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Water	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

SOURCE: Ricondo & Associates, Inc., September 2016.
PREPARED BY: Ricondo & Associates, Inc., September 2016.

The Reduced Phase 1 Improvements Alternative and Increased TDM Alternative would have the same impacts as the proposed Project, but would incrementally reduce some of the impacts of the proposed Project. The Reduced Phase 1 Improvements Alternative would incrementally reduce some construction impacts during Phase 1, but would have greater construction-related impacts in Phase 2 and the same operational impacts as the proposed Project. The Increased TDM Alternative would have the same construction-related impacts as the proposed Project, but would incrementally reduce the operational traffic impacts after Phase 1. Finally, the Reduced Potential Future Related Development Alternative would have similar impacts as the proposed Project in Phase 2, but would reduce operational air quality impacts to less than significant when compared to the proposed Project in Phase 2. The Reduced Potential Future Related Development Alternative would incrementally reduce construction impacts related to the potential future related development, as only half the proposed development would occur. However, the Reduced Potential Future Related Development Alternative would not meet all project objectives, specifically ensuring the highest and best use for reuse of any potential future surplus property in compliance with FAA grant obligations.

While the No APM Alternative is considered the environmentally superior alternative, it would not fully support the proposed Project's objectives. The No APM Alternative would not provide a direct connection to transit or more efficient access to rental cars, and therefore would require the continued use of shuttle buses for transit connections and rental car operations. With these vehicles still traveling through the CTA, on-airport traffic conditions would not improve, and therefore, the No APM Alternative would not achieve the proposed Project objective of relieving congestion in the CTA and surrounding street system.

Therefore, although the No APM Alternative is the environmentally superior alternative, it would have similar significant unavoidable impacts related to operational-related emissions, greenhouse gas emissions, and off-airport traffic. Furthermore, the No APM Alternative would not fully support the objectives of the proposed Project.

6. Other Environmental Considerations

6.1 Significant Unavoidable Impacts

Section 15126.2(b) of the State California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) describe significant environmental impacts that cannot be avoided, including impacts that can be mitigated but not reduced to a less than significant level. Chapter 4 of this EIR provides detailed analyses of the environmental topics identified in the Initial Study, prepared in February 2015, as having the potential to result in significant impacts with implementation of the Los Angeles International Airport (LAX) Landside Access Modernization Program. The following identifies the impacts that cannot be mitigated to a level that is less than significant.

6.1.1 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM PROJECT

Aesthetics

- Visual impacts, including aesthetics and visual character, to the Theme Building.
- Cumulatively considerable contribution to significant cumulative visual impacts, including aesthetics and visual character, to the Theme Building.

Air Quality

- Construction-related regional emissions of volatile organic compounds (VOC) and nitrogen oxides (NO_X).
- Construction-related local concentrations of respirable particulate matter (PM_{10}).
- Operations-related local concentrations of PM_{10}.
- Cumulatively considerable contribution to significant cumulative construction-related air quality impacts, based on significant construction-related Project impacts summarized above.
- Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related Project impacts summarized above.

Cultural Resources

- Indirect impacts to the Theme Building.
- Cumulatively considerable contribution to significant cumulative impacts to the Theme Building.

Greenhouse Gases

- Consistency with plans/policies related to GHG emission reductions.

Public Services

- Relocation of two schools located within the Project site, if mitigation measures are not adopted by Los Angeles Unified School District (LAUSD).

Off-Airport Transportation

- Level of service impacts at one intersection, La Cienega Boulevard and Arbor Vitae Street.
- Level of service impacts at one freeway mainline segment, I-405 at La Cienega Boulevard (northbound).

Construction Surface Transportation

- Impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route.

6.1.2 LAX LANDSIDE ACCESS MODERNIZATION PROGRAM POTENTIAL FUTURE RELATED DEVELOPMENT

Air Quality

- Operations-related regional emissions of VOC, NO_X, and $PM_{10.}$
- Based on the regional emissions analysis, the potential future related development would exceed operations-related local concentrations thresholds for several pollutants.
- Cumulatively considerable contribution to significant cumulative operations-related air quality impacts, based on significant operations-related impacts summarized above.

Greenhouse Gases

- Exceeds per capita efficiency threshold per year per employee.
- Consistency with plans/policies related to GHG emission reductions.

Off-Airport Transportation

- Level of service impacts at one intersection, La Cienega Boulevard and Arbor Vitae Street.
- Level of service impacts at two freeway mainline segments, I-405 at La Cienega Boulevard and I-405 at La Tijera Boulevard (northbound)..

Construction Surface Transportation

- Impacts associated with temporary lane, alley, or street closures, loss of regular vehicular or pedestrian access, and temporary loss for more than one day of an existing bus stop or rerouting of a bus route.

6.2 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 LAX Landside Access Modernization Program. Specifically, as stated in CEQA Guidelines Section 15126.2(c):

> "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 proposed Project would necessarily consume slowly renewable and non-renewable resources. Construction of the proposed Project would require a commitment of resources that would include: (1) building materials, (2) fuel for construction equipment and machinery, and (3) fuel for the transportation of materials, construction workers, and vendors to and from the Project site. Construction would require the consumption of resources that are non-replenishable or may renew so slowly that they are considered non-renewable. These resources would include: raw materials in steel; metals such as copper and lead; aggregate materials such as sand and stone used in concrete and asphalt; petrochemical construction materials such as plastics; and water.

Most of the land proposed to be used for the proposed Project is already dedicated to Airport uses. The acquisition areas are currently in other urban areas with developed uses, such as residential, commercial, and industrial uses, and would be converted to primarily Airport use under the proposed Project.

Operation of the proposed Project would result in additional consumption of nonrenewable resources including electricity, natural gas, and various transportation-related fuels. This would represent a loss of non-renewable resources, which are generally not retrievable. However, the proposed Project would comply with the newly developed LAX Design Guidelines, which incorporate sustainability measures into new development at LAX (see Appendix B). Certain measures that would reduce the use of non-renewable resources during operations 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 buildings by 20 percent; and providing readily accessible areas for the depositing, storage, and collection of non-hazardous materials for recycling. Construction and operation of all proposed Project elements would be subject to the LAX Design Guidelines.

Operational activities associated with the proposed Project would not increase the number of flights or type of aircraft using the airfield because the proposed Project affects only landside development and efficiency of the landside/roadway system. The proposed Project would also not result in changes to air traffic flight patterns or aircraft taxi patterns. Finally, the proposed Project would not change the number of passengers at LAX; it would only change how they access the Airport and terminal facilities. Furthermore, operation the proposed Project would implement energy and water conservation measures, recycling of non-hazardous materials, and other sustainable strategies.

As indicated in Section 4.13, *Utilities and Service Systems*, proposed Project construction and operational impacts on energy and water use and water use would be less than significant.

Based on the above, the use of non-renewable resources from construction and operation of the proposed Project would not result in significant irreversible environmental changes.

6.3 Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires an EIR to discuss the growth-inducing impacts of the proposed Project. An EIR must discuss the ways in which a project could directly or indirectly foster economic or population growth or the construction of additional housing in the surrounding environment. Growth-inducing impacts include the removal of obstacles to population growth, and population growth that requires construction of new community service facilities that could cause significant environmental effects. Characteristics of a project that may encourage or facilitate other activities that could have a significant environmental effect either individually or cumulatively must also be discussed. Also, growth must not be assumed as beneficial, detrimental, or of little significance to the environment.

6.3.1 POPULATION, HOUSING, AND EMPLOYMENT GROWTH

Construction of the proposed Project would not include any permanent or temporary residential structures that would induce population growth directly through the construction of housing. As described in Section 4.12, *Transportation/Traffic*, various roadway and utility improvements are proposed to support operations of the Project facilities and to provide efficient roadway circulation. Although the Project proposes roadway and utility improvements to existing roads and infrastructure, it would not involve the extension of roads or other infrastructure into undeveloped areas. Therefore, the proposed Project would not indirectly induce population growth through the extension of roads or other infrastructure into undeveloped areas.

As described in Section 4.10, *Population and Housing*, construction of the proposed Project would generate approximately 20 to 2,500 annual construction jobs between years 2018 and 2031.[1] On most days, there would be far fewer construction workers at the Project site, as construction workers are typically on the Project site on a temporary basis and during limited hours. In accordance with LAWA's existing Project Labor Agreement (PLA), construction of the proposed Project would maximize employment (at a minimum of 30 percent) of qualified local persons residing within the area. Construction of the proposed Project would also provide the ability for unemployed individuals, who already reside locally within the Project Area, to participate in construction employment opportunities. As such, construction workers would likely commute from the local Los Angeles area and would not require a relocation of their residency as a consequence of the construction job opportunities generated by the proposed Project.

Although the proposed Project does not include any residential development, there exists the potential for indirect population growth as a result of the employment generated to operate the proposed Project components. As discussed in Section 4.10, *Population and Housing*, operation of the Consolidated Rental Car Facility (CONRAC) would require approximately 1,200 employees. The other components of the proposed Project, including the Automated People Mover (APM) and Intermodal Transportation Facilities (ITFs), would only require a modest number of employees (approximately 100) to carry out maintenance, operations, and administrative functions, or support for various on-site commercial amenities. While approximately 1,300 employees would be required to operate the components of the proposed Project, the estimated 1,200 employees required to operate the CONRAC would likely be absorbed from the existing rental car workforce already supporting LAX. The CONRAC would provide a centralized location for multiple rental car agencies, which already serve LAX, into one location. These CONRAC employees would likely transfer their existing place of employment at various locations near LAX to the CONRAC. As shown in Table 4.10-17, the proposed Project would result in a net increase in approximately 100 employees, which represents a less than 1 percent increase in employment on the LAX footprint.

Any employees associated with operations of the proposed Project would likely commute from the local Los Angeles area similar to existing patterns for LAX-badged employees.

As discussed in Section 4.10, *Population and Housing*, the potential future related development could generate up to approximately 1,902 employees on the Project site, based on Southern California Association of Governments (SCAG) employment density factors for these types of land uses.[2] The increase in 1,902 employees on the Project site would represent less than 1 percent of SCAG's employment forecast through year 2040 for jurisdictions included in the Population and Housing Study Area (2,625,400 jobs), as described in Section 4.10, *Population and Housing*.[3] Therefore, employment generated by the potential future related development would be consistent with the projected employment growth for jurisdictions included in the

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1 Connico, Inc., *Los Angeles World Airports Landside Access Modernization Program, Preliminary Planning Construction Schedule*, May 2016 and *CEQA/NEPA Ground Transportation Program, Los Angeles International Airport, Equipment Analysis*, June 2016.

2 Southern California Association of Governments, *Employment Density Study Summary Report*, Table II-B, October 31, 2001.

3 Considers employment growth projections from the 2012–2035 RTP/SCS and 2016–2040 RTP/SCS.

Population and Housing Study Area, and the proposed Project would not directly or indirectly create new jobs not included in these projections

In summary, based on the above analysis, the proposed Project would not directly or indirectly induce population, housing, or employment growth. It would, however, generate a total of 2,002 employees already included in employment growth projections for jurisdictions included in the Population and Housing Study Area.

6.3.2 GROWTH IN LAX PASSENGER ACTIVITY LEVELS

Analyzing potential growth inducing impacts on passenger activity levels requires an understanding of the relationship between passenger activity levels and the effects of the proposed Project improvements that may result in reduced traffic congestion in the Central Terminal Area (CTA) and surrounding roadways. Future passenger activity levels assumed in the Draft EIR analyses were based on the results of the 2014 Terminal Area Forecast (TAF) published by the Federal Aviation Administration (FAA),[4] which are also largely consistent with the future aviation activity levels for LAX forecast by SCAG in the *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy*.[5] As input into the traffic analyses, two peak month average day (PMAD) flight schedules were developed based on the numbers of passengers and operations published in the 2014 TAF, as discussed in Section 4.12 of this Draft EIR.[6]

As discussed below, projected future increases in passenger activity levels, forecasted by the FAA and SCAG, are anticipated to be realized with or without the proposed Project. As discussed in the FAA 2014 TAF Summary Report, the FAA's forecast is based on projected demand for air transportation considering local and national economic conditions, "independent of the ability of the airport and air traffic control system to furnish the capacity required to meet the demand".[7] The FAA further acknowledges in the Report that existing constraints at the airport are "embedded in historical data" used by the FAA as a base for the forecast.[8] Accordingly, historical data on passenger activity levels reflect variations in passenger activity levels that may be attributed to traffic conditions in the CTA.

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4 Federal Aviation Administration, APO Terminal Area Forecast 2014, January 2015. Note that since the flight schedules were finalized in May 2015 based on the results of the 2014 TAF, the FAA released the 2015 TAF in early 2016. Over the periods of 2014-2024 and 2014-2035, the FAA estimates the projected growth in passengers and operations to vary by approximately 0.1 percent based on the results presented in the 2015 TAF compared to the 2014 TAF. See the report entitled *LAX 2024-2035 Passenger Flight Schedules* prepared by Ricondo & Associates, Inc., in August 2016 for additional information.

5 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.

6 Ricondo & Associates, Inc., *LAX 2024-2035 Passenger Flight Schedules*, August 2016.

7 Federal Aviation Administration, *Terminal Area Forecast Summary, Fiscal Years 2014-2040*, p. 4, Available: https://www.faa.gov/data_research/aviation/taf/media/taf_summary_fy2014-2040.pdf, accessed August 25, 2016.

8 Federal Aviation Administration, *Terminal Area Forecast Summary, Fiscal Years 2014-2040*, p. 4, Available: https://www.faa.gov/data_research/aviation/taf/media/taf_summary_fy2014-2040.pdf, accessed August 25, 2016.

Passenger activity levels at LAX over the last two years have increased 6-percent year-over-year (2014 and 2015), compared to an average of 4.1 percent over the four previous years (2010 to 2013), suggesting no direct statistical correlation between recent passenger activity levels and the existing congested conditions of the CTA.[9] These data strongly support a finding that reducing airport roadway congestion would not remove an obstacle to passenger growth.

Although congested traffic conditions in the CTA at LAX may cause passengers to arrive at the Airport earlier to account for traffic delays, the decision to choose to fly to, from, or through LAX is driven by many other factors. In its guidance for developing local aviation forecasts, the FAA discusses the following factors affecting aviation activity: socioeconomic data, demographics, disposable income, geographic attributes, and external factors such as fuel costs and airline industry-related factors (airline mergers, airline hubbing practices, and airfares).[10] As further discussed in the Airport Cooperative Research Board (ACRB) Report 98, passengers will consider the following elements in evaluating travel options: air service availability, price, itineraries, flight schedules, airport convenience, airline quality, airport quality, and loyalty programs.[11] Airport accessibility is discussed in the Report as another contributing factor among other factors, such as length of time to travel to the airport, reliability of other modes of transportation, and access cost.[12] In other words, passengers choosing whether to fly and which airport to use are primarily motivated by airport destination options, flight frequency, fares and similar patterns. An additional 10-15 minutes of surface congestion will generally not cause passengers to change to another airport that may require even longer connecting flights, less convenient flight times, similar surface traffic, and more expensive fares. Instead, passengers simply build additional times into their surface transportation schedules.

Airlines do not consider CTA or nearby surface traffic congestion as a factor in their business decisions regarding scheduling. Traffic conditions in the CTA or in the vicinity of LAX are not a direct input into flight scheduling models or airline decisions to add more seats or frequencies at LAX. As discussed in the ACRB Report 98, airline business models are based on "sophisticated revenue, inventory, and pricing management systems."[13] The Report also discusses the recent airline industry market conditions and how airlines have

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9 LAX annual passenger activity levels: 2010: 59,070,127; 2011: 61,862,052; 2012: 63,688,121; 2013: 66,665,726; 2014: 70,663,519; 2015: 74,937,004 – Source: City of Los Angeles, Los Angeles World Airports, "Statistics - Ten Year Summary – Passengers," Available: http://www.lawa.org/welcome_LAX.aspx?id=800, accessed August 17, 2016.

10 U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5070-6B, Change 2, *Airport Master Plans*, January 27, 2015, Chapter 7 *Aviation Forecasts*, pp. 37-38, Available: http://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5070-6B-Change-2-Consolidated.pdf, accessed August 25, 2016.

11 Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Report 98, Understanding Airline and Passenger Choice in Multi-Airport Regions*, 2013, p. 13, Available: http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_098.pdf, accessed August 25, 2016.

12 Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Report 98, Understanding Airline and Passenger Choice in Multi-Airport Regions*, 2013, pp. 13 and 14, Available: http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_098.pdf, accessed August 25, 2016.

13 Transportation Research Board of the National Academies, Airport Cooperative Research Program, *ACRP Report 98, Understanding Airline and Passenger Choice in Multi-Airport Regions*, 2013, p. 5, Available: http://onlinepubs.trb.org/onlinepubs/acrp/acrp_rpt_098.pdf, accessed August 25, 2016.

exhibited "great care when adding capacity on existing routes or starting service on new routes", especially in multiple-airport regions such as the Los Angeles area. Airlines have continued to add seats at LAX despite surface congestion and there is no indication that they will change this pattern. Therefore, reduced traffic congestion in the CTA would not be an important factor in airlines scheduling more flights or scheduling larger aircraft at LAX to accommodate any theoretical additional demand for air travel resulting from less traffic congestion in the CTA.

It is also important to note that relieving traffic in the CTA does not directly increase the Airport's capacity for additional passengers. The ground access component is only one component of the overall airport system, iwhich includes other key components such as the runway and taxiway system and passenger processing components (e.g., ticket counters, security screening positions, holdrooms and gates).[14] The theoretical physical throughput capacity of any individual component of an airport system (e.g., terminal facilities and gates, runways and taxiways, ground access and other components of the airport system) does not set the overall airport capacity.[15] Rather, practical capacity takes into account market assumptions, expected physical characteristics of various airport system functional elements and how they are planned and expected to work together.[16] Even if, hypothetically, reducing congestion in the CTA could allow more passengers to access the Airport, the practical capacity of the Airport and actual passenger growth would still be determined by how all of the individual components of the airport system function together. The 2016-2040 Regional Transportation Plan published by SCAG identifies the airfield as the limiting factor of capacity at LAX, based on the existing runway configuration. The proposed LAX Landside Access Modernization Program Project would not affect or change any airfield components, including the runways, taxiways, taxilanes, or aircraft arrival and departure procedures, and thus would not increase the overall capacity of LAX.

In summary, based on the above analysis, reduced traffic congestion in the CTA associated with the proposed Project would not directly or indirectly induce LAX passenger growth. The proposed Project would not directly or indirectly cause passenger growth, which could occur with or without the proposed Project. Based on FAA guidance and ACRB studies, reduced traffic congestion in the CTA and other enhancements in passenger convenience provided by the proposed Project are not primary consideration in passengers' decisions to travel to, from or through LAX, and how often they travel. Many other primary factors such as airfare prices and flight schedules more directly influence these decisions. In addition, based on ACRB studies, relieving traffic congestion in the CTA would not cause airlines to change their business decisions regarding adding more seats and flights at LAX, and would not directly increase the Airport's capacity for additional passengers.

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14 Note that according to the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS) published by the Southern California Association of Governments (SCAG) in April 2016, the airport system component limiting capacity at LAX is the airfield component. See Aviation & Airport Ground Access Appendix, p. 20.

15 U.S. Department of Transportation, Federal Aviation Administration, *Record of Decision, Proposed LAX Master Plan Improvements, Appendix B, Responses to Comments on the Final Environmental Impact Statement*, May 20, 2005, p. B2-77, Available: http://www.faa.gov/airports/environmental/records_decision/lax/#lax05, accessed August 25, 2016.

16 City of Los Angeles, Los Angeles World Airports, *Preliminary LAX Specific Plan Amendment Study Report*, July 2012, Section 6.2, p. 6-2, Available: http://www.lawa.org/LAXSPAS/Reports.aspx.

6.4 Less than Significant Effects

Section 15128 of the State CEQA Guidelines requires that an EIR briefly indicate the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. Table 1-1, Significant Impacts of the Proposed LAX Landside Access Modernization Program Project, in Chapter 1, *Introdcution and Executive Summary*, identifies the effects of the proposed Project that were determined to be less than significant, based on analysis in this EIR. The Initial Study included in the February 2015 LAX Landside Access Modernization Program EIR Notice of Preparation, included as Appendix A of this EIR, also determined, for the reasons explained therein, that additional effects, including effects on the following resource areas, would result in no impact, or less than significant impacts: agricultural and forestry resources, geology and soils, mineral resources, and recreation.

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7. Evaluation of Amendments to the LAX Plan and LAX Specific Plan

7.1 LAX Plan Proposed Amendments

Implementation of the Los Angeles International Airport (LAX) Landside Access Modernization Program would require amendments to the LAX Plan to include descriptions of the proposed transportation facilities, as described in Chapter 2, *Description of the Proposed Project*. In addition, the Belford Special Study Area would be updated to reflect the proposed use of this area under the Project, Airport Landside. Amendments would include changes to the text of the LAX Plan as well as updates to the associated figures. Text changes to the LAX Plan include updating the Vision for LAX; updating the goals and objectives to reflect the proposed Project; adding a description of a new Airport Landside Support Area; updating policies to reflect the proposed Project and other programs; and removing text regarding projects that are no longer relevant. Plan Areas would be updated to include: additional areas that are currently located in the Westchester-Playa del Rey Community Plan; areas in which the proposed facilities would be located; and to change the designation of the Belford Special Study Area to Airport Landside. The exact language of the LAX Plan amendments is included in **Appendix C**, *LAX Plan Revisions*. In addition, LAX Plan maps and diagrams would be updated to reflect the proposed plan area changes.

Following is a summary of the potential amendments organized by sections within the LAX Plan. The exact language of the amendments would be reviewed and approved by various decision-making bodies, including the Los Angeles City Council, before implementation.

1. Purpose of the Plan

This section of the LAX Plan describes the use of the LAX Plan, describes a "Vision" for LAX, and describes the LAX Plan area. As part of the proposed Project, and to reduce the need for future amendments, the description of the Vision for LAX would be revised to remove outdated references to Southern California

Association of Governments (SCAG) passenger forecasts[1], and to clarify language within this section with respect to passenger growth. The description of the LAX Plan area would also be revised for clarity.

2. Goals and Objectives

This section would be revised to update sustainability and ground access goals to align with the objectives of the proposed Project. The ground access goal would be revised to focus on LAX, the only airport to which the LAX Plan is applicable, rather than referencing improvements at other regional airports. References to the FlyAway[2] program would also be removed; instead LAWA would include a goal to relieve congestion in the Central Terminal Area (CTA) and on the surrounding street system by developing a flexible transportation system that provides travel options.. While LAWA intends to fulfill its obligations to the FlyAway program pursuant to previously adopted mitigation for other LAX projects, removing references to the FlyAway program in the LAX Plan would provide LAWA increased long-term flexibility to reduce airport trips by the most effective and efficient means available. Other minor editorial changes would be made for consistency and clarity.

3. Policies and Programs

Safety and Security

This section would be revised for consistency with current airfield policies and programs. Text regarding the construction of center taxiways would be modified to call for evaluation only. References to the Runway Status Lights system would be removed as these projects have been completed.

Land Use

This section would be revised to remove a reference to the Belford Special Study Area, and reflect the changes to the plan area from the proposed Project. Revisions to the Airport Airside Area in this section would include the removal of Policy P2 within Section 3.2.1, Airport Airside, which states "Limit airport capacity by restricting the number of gates (including remote gates) to not more than 153 at Master Plan build out." Although this language would be removed as a policy, LAWA is still bound until 2020 to the passenger gate provisions of the Stipulated Settlement which limits the number of passenger gates (including remote gates) to 153 if the number of annual passengers at LAX is at or above 75 million.[3] Text regarding the Airport Landside Area permitted uses would be revised to incorporate facilities and improvements that would be changed under the

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1 SCAG's current Regional Transportation Plan is 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.

2 A FlyAway is a facility which allows airline passengers and employees to park nearer to their point of origin and board a LAWA-operated bus to the airport.

3 City of El Segundo, City of Inglewood, City of Culver City, County of Los Angeles, and Alliance for a Regional Solution to Airport Congestion v. City of Los Angeles, *Judgment Pursuant to Stipulated Settlement, Case No. RIC 426822*, February 16, 2006. The Stipulated Settlement expired on December 31, 2015 except for the passenger gate provision which is in effect through December 31, 2020.

proposed Project. This would include minor editorial changes to the CTA; the provision for two ITFs; and clarification on the components and connections of the Automated People Mover (APM). This section would also remove text pertaining to landscaped buffer areas; this program would be replaced by the LAX Design Guidelines (see **Appendix B**). Amendments to the LAX Plan would provide for a new area: the Airport Landside Support Area. A description of this Area, as well as primary allowable uses, would be incorporated into the LAX Plan text.

Conservation

Policies and programs related to energy and resources would be more generally categorized as "Sustainability" and would be updated for consistency with the proposed Project and the LAX Design Guidelines.

Circulation and Access

Policies and programs related to circulation and access would be updated for consistency with the proposed Project. References to the FlyAway program would be removed. While LAWA intends to fulfill its obligations to the FlyAway program pursuant to previously adopted mitigation for other LAX projects, removing references to the FlyAway program in the LAX Plan would provide LAWA increased long-term flexibility to reduce airport trips by the most effective and efficient means available, including through the Transportation Demand Management mitigation measure identified in Section 4.12.2.9.1.

Economic Benefits

No amendments are anticipated to this section.

Noise

This section of the LAX Plan would be revised to include minor editorial changes regarding logistics of the LAX Airport Noise Mitigation Program. The Belford Special Study Area, located east of Airport Boulevard and south of W. Arbor Vitae Street, is currently designated for Medium Residential and Regional Center Commercial land uses; the current LAX Plan states that the Belford Special Study Area is subject to additional study prior to any new development. This reference would be removed as the proposed Project would establish a new use for this area.

LAWA has committed, as part of the West Aircraft Maintenance Area Project, to restrict high-powered engine run-up testing during nighttime hours; this policy would also be incorporated.

Air Quality

Policies and programs related to air quality would be updated for consistency with the proposed Project and the LAX Design Guidelines. References to the FlyAway program would be removed. While LAWA intends to fulfill its obligations to the FlyAway program pursuant to previously adopted mitigation for other LAX projects, removing references to the FlyAway program in the LAX Plan would provide LAWA increased long-term flexibility to reduce airport trips by the most effective and efficient means available.

Hazardous Waste

No amendments are anticipated to this section.

Design

Policies and programs related to aesthetics and design would be updated for consistency with the proposed Project and the LAX Design Guidelines. References to outdated design plans would be removed.

4. Implementation

This section would be revised to incorporate clarification of LAX Specific Plan areas, consistent with the revisions to be implemented under the LAX Specific Plan. Other minor editorial changes would be made for consistency.

5. LAX Specific Plan

The LAX Specific Plan would be amended as a separate document; see Section 7.2, *LAX Specific Plan*.

6. Los Angeles Airport/El Segundo Dunes Specific Plan

The LAX/El Segundo Dunes Specific Plan is a separate document from the LAX Plan. No amendments are anticipated to this section.

7. Coastal Transportation Corridor Specific Plan

The Coastal Transportation Corridor Specific Plan is a separate document from the LAX Plan. No amendments are anticipated to this section.

Figure 1

Figure 1 would be revised to reflect the current boundary of the Airport, as well as any changes to the boundary that may occur as a result of the proposed Project, including any property proposed for acquisition (see Figure 2-52 in Chapter 2, *Description of the Proposed Project*). It is the intent that the LAX Plan boundary include all property owned by LAWA. Amendments to this map would include the addition of: the Belford area; the northwest corner of Manchester Square; parcels located between W. 96th Street and W. 98th Street, east of Vicksburg Avenue; the southern-adjacent parcel to W. 96th Street between Sepulveda Boulevard and Vicksburg Avenue; the parcel between W. 98th Street and Century Boulevard, east of Avion Drive; the parcel between W. 98th Street and Century Boulevard, midway between Vicksburg Avenue and Avion Drive; and the parcel north of 111th Street, west of Hindry Avenue. Figure 1 would also be revised to remove a parcel of property currently within the LAX Plan area between W. 96th Street and W. 98th Street, west of Airport Boulevard.

Figure 2

This map would be revised to update the regional highways and freeways consistent with the proposed Project (see Appendix C).

Figure 3

Figure 3 would be a new map. This map would show the two specific plan areas (the LAX Specific Plan area and the LAX/El Segundo Dunes Specific Plan area), as modified by this Project, that are covered under the LAX Plan (see Appendix C).

7.2 LAX Specific Plan Proposed Amendments

The LAX Specific Plan establishes the development standards consistent with the LAX Plan for the Airport and surrounding area. It is the principal mechanism by which the goals and objectives of the LAX Plan are achieved and the policies and principles are implemented.

The proposed Project would require amendments to the LAX Specific Plan to update the text of the plan to reflect the proposed transportation components. Amendments would include: changes in the text of the LAX Specific Plan to facilitate implementation of the programs and policies in the plan; the addition of an Airport Landside Support Subarea; reorganization of text for consistency and clarity; removal of the parking regulations which are specific to the LAX Master Plan; clarification of which parcels within the LAX Specific Plan are subject to the trip generation provisions of the LAX Specific Plan; changes to the LAX Specific Plan compliance review; replacement of mitigation and reporting requirements for traffic generation and aviation activity related to the LAX Master Plan with reporting requirements that would be standard practice for all projects; removal of certain additional study requirements that would be fulfilled as part of the Landside Access Modernization Program Project; and the addition of LAX Design Guidelines, as well as updates to the associated figures. The LAX Specific Plan would also be amended to allow the Executive Director to authorize the sale, dispensing, and consumption of alcohol beverages within sterile areas of the Airport or related off-site sterile areas without having to obtain a Conditional Use Permit from the Department of City Planning. The exact language of the LAX Specific Plan amendments is included in **Appendix D**, *LAX Specific Plan Revisions*.

The LAX Specific Plan Area diagrams would be updated to include the additional areas in which the proposed facilities would be located and for consistency with the LAX Plan. The LAX Specific Plan Subarea map would be updated to designate the areas of the proposed components as Airport Landside Subarea, and future related development as Airport Landside Support Subarea. In addition, LAX Specific Plan maps and diagrams would be updated to reflect the proposed roadway changes.

Following is a summary of the potential amendments organized by sections within the LAX Specific Plan. The exact language of the amendments would be reviewed and approved by various decision-making bodies, including the Los Angeles City Council, before implementation.

Section 1. Establishment of the LAX Specific Plan

No amendments are anticipated to this section.

Section 2. Purposes

This section of the LAX Specific Plan would be revised for organizational purposes and minor administrative changes.

Section 3. Relationship to the Los Angeles Municipal Code and Other Ordinances

This section of the LAX Specific Plan would be slightly reorganized for consistency and clarity. Additionally, revisions would reference the change of administrative procedures with respect to the sale, dispensing, and consumption of alcoholic beverages within sterile areas of the Airport or related off-site sterile areas. This change is furthered described in Section 16.

Section 4. Application of Specific Plan to Development in Specific Plan Area

This section of the LAX Specific Plan would be revised to include references of the addition of an Airport Landside Support Subarea. Revisions regarding details of the Airport Landside Support Subarea would be further discussed in Section 11.

Section 5. Definitions

This section would be revised to remove, add, or modify definitions for facilities and improvements that would be changed under the proposed Project, or to correct outdated information. The APM would be redefined to remove references to access points that would no longer be applicable. The CTA would be redefined to remove references to proposed Project components, as these are not the only landside facilities from which passengers would be transitioning. The Mitigation Monitoring and Reporting Program (MMRP) would be redefined for applicability to projects and programs beyond the LAX Master Plan. The Midfield Satellite Concourse would be redefined, as interim operations would not include provisions for an APM. The definition of a "Project" would be updated for consistency with the proposed Project and the LAX Design Guidelines. Definitions would be added for the Cargo Staging Area, Imperial Terminal Area, LAX Design Guidelines, LAX Master Plan, Non-Sterile Area, Sterile Area, and Transportation Security Administration (TSA). The definition for the LAX Master Plan Stakeholder Liaison would be removed, as this position is redundant. LAWA funds and would continue to fund a stakeholder liaison position in the Councilmember District 11 office.

Section 6. Safety of Airport Operations

No amendments are anticipated to this section.

Section 7. LAX Specific Plan Compliance Review

This section would include administrative revisions to the Executive Director's Review for LAX Specific Plan compliance review and notice requirements for Board of Airport Commissioners (BOAC) hearings. Clarification has been made that the compliance review is primarily an LAX Specific Plan Compliance review, which is how the review has in practice been performed. Revisions would be incorporated to transfer LAX Specific Plan compliance determinations to BOAC instead of City Council. This section would also be revised for editorial changes necessary for consistency and clarity with other proposed amendments.

Revisions to this section would include the removal of subsection G, Monitoring and Reporting, and subsection H, Additional Study Requirements. Portions of these requirements would be consolidated into proposed Appendix A, as discussed below. Requirements regarding the preparation of a Specific Plan Amendment Study would be removed from the LAX Specific Plan as the LAX Landside Access Modernization Program EIR fulfills that requirement as described in Section 2.8.2.

Text regarding a domestic passenger and airline market survey/study would be removed, as LAWA would undertake this study as part of the proposed Project. Text regarding the LAX Master Plan Stakeholder Liaison would be removed, as this position is redundant. LAWA funds and would continue to fund a stakeholder liaison position in the Councilmember District 11 office.

Section 8. Zoning & Land Use

This section would include revisions regarding the Airport Landside Support Subarea, as well as clarification of Districts within the LAX Northside Subarea. Provisions would be included for temporary relocation uses under the proposed Project, which would be determined on a case-by-case basis and would be subject to California Environmental Quality Act (CEQA) review. Text regarding yard and setback regulations would be removed and replaced with references consistent with the proposed Project and the LAX Design Guidelines. References to the Imperial Terminal Area would be removed from this section and moved to Section 5, Definitions. Revisions would also be made regarding building heights and setbacks, consistent with the LAX Design Guidelines.

Section 9. Airport Airside Subarea

This section would be revised for editorial changes necessary for consistency and clarity with other proposed amendments. Revisions would also be made regarding building heights and setbacks, consistent with the LAX Design Guidelines.

Section 10. Airport Landside Subarea

This section would be revised for editorial changes necessary for consistency and clarity with other proposed amendments. Revisions would also be made regarding building heights and setbacks, consistent with the LAX Design Guidelines. Projects located in this Subarea would not be required to provide on-site or off-site parking to encourage the use of shared public parking structures planned in this Subarea.

Section 11. Airport Landside Support Subarea

This section would be added to the LAX Specific Plan as a new subsection regarding the creation of a new Subarea, the Airport Landside Support Subarea. The purpose, permitted uses, prohibited uses, and parking requirements would be identified for this new Subarea. Permitted uses would include all uses currently permitted in the C1 Zone; prohibited uses would include aircraft under power, and any residential structures. Building heights, setbacks, and development standards for this Subarea would be consistent with the LAX Design Guidelines. Similar to the Airport Landside Subarea, projects located in this Subarea would not be required to provide on-site or off-site parking to encourage the use of shared public parking structures planned in this Subarea.

Section 12. LAX Northside Subarea

Based on the inclusion of additional information above, the section number for the "LAX Northside Subarea" would change from Section 11 to Section 12. This section would be revised for editorial changes necessary for consistency and clarity with other proposed amendments. Revisions would also be made regarding permitted land uses, maximum heights, and net new floor areas. Parking requirement guidance would also be included for this Subarea.

Section 13. Transportation Regulations

This section would be revised to remove the right-of-way dedications and required traffic improvements based on changes due to the proposed Project. References to the Specific Plan Amendment Study related to trip generation tied to LAX Master Plan projects, would be removed as LAWA does not intend to initiate any new LAX Master Plan projects. For the same reason, the limitation on net new trips at full build out of the LAX Master Plan would be removed. Text would be added for the new Airport Landside Support Subarea regarding trip generation; these areas are not subject to the limitation on trips as defined in this section. Text regarding required traffic improvements for the Airport Airside and Airport Landside Subareas would be removed for consistency with the proposed Project. Streetscape standards under this section would be consistent with the LAX Design Guidelines and any applicable adopted streetscape plan.

Section 14. Parking Regulations

This section of the LAX Specific Plan limits the number of off-airport parking spaces at LAX in relation to LAX Master Plan projects. However, LAWA does not intend to initiate any new LAX Master Plan projects. This section would be removed.

Section 15. Sign Regulations

This section would be revised to include references to the LAX Sign District.[4]

Section 16. Design Guidelines and Standards

This section would be added to the LAX Specific Plan to implement the LAX Design Guidelines proposed as part of the Project and for consistency with the LAX Northside Design Guidelines and Standards. Both sets of guidelines may need to be updated periodically; therefore, text regarding the administrative process of amendments would be included in this section.

Section 17. Alcohol Use Authorizations

This section would be added to the LAX Specific Plan as an administrative change regarding the process of approving the sale and service of alcoholic beverages at the Airport. Under this addition, the Executive Director would have authority to approve or deny a request for an authorization for the sale and consumption

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[4] City of Los Angeles, Ordinance No. 183,737, Los Angeles International Airport (LAX) Sign District, June 2015.

of alcoholic beverages within sterile areas. This section would include procedural guidance and authorization provisions.

Section 18. Severability

Based on the inclusion of additional information above, the section number for "Severability" would change from Section 15 to Section 17. However, no further amendments are anticipated to this section.

Section 19. Certification and Signature Page

Based on the inclusion of additional information above, the section number for "Certification and Signature Page" would change from Section 16 to Section 18. However, no further amendments are anticipated to this section.

Appendix A

A new Appendix A, Monitoring and Reporting, would be included to provide additional guidance on monitoring and reporting for LAX projects. Under this revision, LAWA would be required to prepare and submit annual reports regarding traffic generation, aviation activity analyses, and mitigation monitoring and reporting. These reports are currently required under Section 7.G of the LAX Specific Plan; however, the reporting requirements are specific to LAX Master Plan projects. As LAWA does not intend to initiate any new LAX Master Plan projects, this revision would make these reporting requirements standard practice for all projects.

Map 1

Map 1 would be renamed Figure 1 and revised to reflect the current boundary of the Airport, as well as any changes to the boundary that may occur as a result of the proposed Project, including any property proposed for acquisition (see Figure 2-56 in Chapter 2, *Description of the Proposed Project*). It is the intent that the LAX Specific Plan boundary include all property owned by LAWA, including the areas governed by the LAX Plan and the LAX/El Segundo Dunes Specific Plan. Amendments to this map would include the addition of: the Belford area; the northwest corner of Manchester Square; parcels located between W. 96th Street and W. 98th Street, east of Vicksburg Avenue; the southern-adjacent parcel to W. 96th Street between Sepulveda Boulevard and Vicksburg Avenue; the parcel between W. 98th Street and Century Boulevard, east of Avion Drive; the parcel between W. 98th Street and Century Boulevard, midway between Vicksburg Avenue and Avion Drive; and the parcel north of 111th Street, west of Hindry Avenue. Map 1 would also be revised to remove a parcel of property currently within the LAX Specific Plan area between W. 96th Street and W. 98th Street, west of Airport Boulevard.

Map 2

Map 2 would be renamed Figure 2 and would be revised to be consistent with the LAX Specific Plan boundary shown on Map 1, as may be amended as described above (see Figure 2-57 in Chapter 2, *Description of the Proposed Project*). In addition, the Belford area, not currently within the LAX Specific Plan Boundary, would be shown as Airport Landside. Limits of the Airport Airside and Airport Landside Subareas depicted on the map would be revised to reflect any changes that may occur under the proposed Project. Map 2 would also be revised to include the new subarea, "Airport Landside Support Subarea". There would be no changes to the LAX Northside or Airport Airside Subareas.

Map 3

Map 3 would be renamed to Figure 3; no changes to the map are proposed.

7.3 Environmental Analysis

In addition to administrative and Project-related changes, implementation of the revisions to the LAX Plan and LAX Specific Plan, as described above, would result in the following actions:

- Removal of the language regarding limitation on the number of off-airport parking spaces;
- Removal of the language regarding limitation on the number of gates at LAX; and
- Removal of the language regarding FlyAways.

The actualization of those actions could result in environmental impacts that were not discussed in Chapter 4, *Environmental Impact Analysis*. As the removal of this language is a policy change, and not a physical change to the Airport environment, the general nature of those impacts is described below. The other proposed amendments described above are either administrative in nature or are to make the plans consistent with the proposed Project. These would not result in environmental impacts beyond those resulting from the physical improvements of the proposed Project as analyzed in Chapter 4 of this Draft EIR; hence, no further analysis of those amendments is warranted.

7.3.1 AESTHETICS

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore visual resources, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. With the incorporation of the LAX Design Guidelines into the LAX Specific Plan, it is expected that the visual character in the area would improve over existing conditions. Therefore, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.2 AIR QUALITY AND HUMAN HEALTH

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore air quality or human health, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation.

LAWA would remove references to the FlyAway program, but would include a new goal to relieve congestion in the CTA and on the surrounding street system by developing a flexible transportation system that provides travel options. While LAWA intends to fulfill its obligations to the FlyAway program pursuant to previously adopted mitigation for other LAX projects, removing references to the FlyAway program in the LAX Plan would provide LAWA increased long-term flexibility to reduce airport trips by the most effective and efficient means available. . The proposed Project includes mitigation that would supplement the existing FlyAway service, including Standard Control Measure (Mitigation Measure) LAX-AQ-2, Transportation-Related Air Quality Control Measures (see Section 4.2.1, *Air Quality*), as well as the Travel Demand Management (TDM) Program (see Mitigation Measure MM-ST (LAMP)-6 in Section 4.12.2.9.1) thus, air pollutant emissions are not anticipated to increase. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.3 BIOLOGICAL RESOURCES

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore biological resources, at LAX. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.4 CULTURAL RESOURCES

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore cultural resources, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.5 GREENHOUSE GAS EMISSIONS

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore greenhouse gas (GHG) emissions, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.6 HAZARDS AND HAZARDOUS MATERIALS

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore hazards or hazardous materials, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.7 HYDROLOGY/WATER QUALITY

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore hydrology or water quality, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.8 LAND USE AND PLANNING

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore land use, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. This EIR evaluates the changes to the affected plans, but any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.9 NOISE AND VIBRATION

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore hazards or hazardous materials, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.10 POPULATION AND HOUSING

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore population and housing, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.11 PUBLIC SERVICES

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore an increase to public services, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.12 TRANSPORTATION/TRAFFIC

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore an increase to traffic, at or around LAX.

Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation.

LAWA has completed its obligation to establish FlyAway service specified in the existing LAX Plan. LAWA would remove references to the FlyAway program, but include a goal to relieve congestion in the CTA and on the surrounding street system by developing a flexible transportation system that provides travel options. While LAWA intends to fulfill its obligations to the FlyAway program pursuant to previously adopted mitigation for other LAX projects, removing references to the FlyAway program in the LAX Plan would provide LAWA increased long-term flexibility to reduce airport trips by the most effective and efficient means available. The proposed Project includes measures that would supplement the FlyAway service, including the TDM Program (see Mitigation Measure MM-ST (LAMP)-6 in Section 4.12.2.9.1), and would result in similar traffic conditions as under the proposed Project. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

7.3.13 UTILITIES AND SERVICE SYSTEMS

Amendments to the LAX Plan and LAX Specific Plan would generally correspond to changes at LAX as a result of the proposed Project, as well as updates to administrative processes. Other than the physical improvements proposed under the Project, amendments to the LAX Plan and LAX Specific Plan would not result in a change to the physical environment, and therefore an increase to utilities or service systems, at LAX. Removals to the parking and gate limitations may result in future increased development; however, removal of these policies does not mean that additional development would occur. Any future development related to the change in these policies would undergo separate CEQA review and would be subject to BOAC and other approvals prior to implementation. As such, no additional impacts would result from the plan amendments under the proposed Project beyond those described in Chapter 4.

8. List of Preparers, Parties to Whom Sent, List of References, NOP Comments, List of Acronyms

Chapter 8 contains the following information:

- List of Preparers
- List of Parties to Whom Sent
- List of References
- NOP Comments
- List of Acronyms

8.1 List of Preparers

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8.2 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.

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8.4 NOP Comments

A Notice of Preparation (NOP) for the LAX Landside Access Modernization Program Draft EIR was published on February 5, 2015. The public comment period concluded on March 9, 2015. Comment letters received from public are listed below. Copies of the February 5, 2015 NOP and the comment letters received are included in Appendix A.

AFFILIATION, CONTACT	DATE
California Public Utilities Commission – Rail and Transit Safety Branch, Gilbert, Daren	February 25, 2015
State of California Department of Transportation (CalTrans), Sosa, David	March 5, 2015
South Coast Air Quality Management District, Wong, Jillian	February 12, 2015
Southern California Association of Governments (SCAG), Chang, Ping	March 9, 2015
City of Los Angeles, Councilmember Eleventh District, Bonin, Mike	March 10, 2015
Shute, Mihaly & Weinberger LLP (City of El Segundo), Petta, Joseph	March 9, 2015
Los Angeles County Metropolitan Transportation Authority, Mieger, David	March 9, 2015
Buchalter Nemer (Culver City), Lichman, Barbara	March 6, 2015
Wastewater Engineering Division LA Sanitation, Poosti, Ali	March 12, 2015
Alliance for a Regional Solution to Airport Congestion, Schneider, Denny and Robert Acherman	March 23, 2015
Alliance for a Regional Solution to Airport Congestion, Schneider, Denny and Robert Acherman	March 9, 2015
ARFF Solutions, Pierce, Danny	February 28, 2015
Certified Transportation, Gregory, Eric	March 4, 2015
Distinct T.C. Services, Lewis, Betty	February 25, 2015
Gateway to LA Business Improvement District, Hughes, Laurie	March 9, 2015
Los Angeles Community College District, Hall, Thomas	March 4, 2015
Los Angeles International Airport Area Advisory Committee, Cumming, William	March 6, 2015
Neutrogena Corporation, Freyre, Michelle	March 6, 2015
Residence Inn/Embassy Suites, Rodriguez, Roger	February 19, 2015
Residence Inn/Embassy Suites, Contreras, Francisco	February 19, 2015
Residence Inn/Embassy Suites, Romero, Guadalupe	February 19, 2015
Residence Inn/Embassy Suites, Damodio, Michael	February 19, 2015

Residence Inn/Embassy Suites, Lamas, Sindy	February 19, 2015
Santa Barbara Airbus, Onnen, Eric	March 3, 2015
Sierra Club, Wright, Jerard and Darrell Clarke	March 9, 2015
Beedon, Tom	February 19, 2015
Castagnasso, Monica	March 9, 2015
Christensen, Cory	February 20, 2015
Cope, Danna	March 9, 2015
Cortez, Rene	February 19, 2015
Fields, Jason	February 25, 2015
Garcia, Hector	May 13, 2015
Gearring, Wanda	February 21, 2015
Gonder, Tamieka	February 21, 2015
Green, Stanley	February 8, 2015
Hellmers, Steve	February 19, 2015
Henderson, Kathie	February 21, 2015
Hoo, Michele	March 16, 2015
Jurkiewicz, Edmund	February 19, 2015
Kautai, Deanna	February 19, 2015
Keating, Edward	February 10, 2015
Mora, Israel	February 19, 2015
Morrison, Nancy-Gene W.	February 21, 2015
Morrison, Nancy-Gene W.	March 9, 2015
O'Neill, Cindy	February 8, 2015
Rutkowski, Greg	February 19, 2015
Sambrano, Diane	March 9, 2015
Solomon, Paul	February 21, 2015
Vaughn, Vicki	March 1, 2015
Wilson, Mary	February 7, 2015

8.5 List of Acronyms

§	Section/Paragraph
°C	Degrees Celsius
°F	Degrees Fahrenheit
AAM	Annual Arithmetic Mean
AB	Assembly Bill
AC	Advisory Circular
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Materials
ACWM	Asbestos-Containing Waste Materials
ADA	Americans with Disabilities Act
ADD	Average Daily Dose
ADP	Airport Development Program
ADT	Average Daily Traffic
AEP	Association of Environmental Professionals
AEP	Airport Emergency Plan
AERMOD	AMS/EPA Regulatory Model
AFY	Acre-feet/year
Airport	Los Angeles International Airport
ALP	Airport Layout Plan
AMC	Airport Metro Connector
ANMP	Aircraft Noise Mitigation Program
AOA	Airport Operations Area
APE	Area of Potential Effect
APM	Automated People Mover
APU	Auxiliary Power Units
AQMP	Air Quality Management Plan
ARCC	Airport Response Coordination Center
ARFF	Aircraft Rescue and Fire Fighting
ASTM	American Society for Testing and Materials
ATCM	Air Toxics Control Measure
ATCT	Airport Traffic Control Tower
ATP	Archaeological Treatment Plan
ATSAC	Automated Traffic Surveillance and Control
ATSDR	Agency for Toxic Substance and Disease Registry
AVI	Automated Vehicle Identification
AVO	Average Vehicle Occupancy
Basin	South Coast Air Basin
BAT	Best Available Technology Economically Achievable
bgs	Below Ground Surface
BMP	Best Management Practice
BOAC	Board of Airport Commissioners
BOD	Basis of Design
BOD	Biological or Biochemical Oxygen Demand

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BPA	Business Plan Act
BWP	Bradley West Project
C2F6	Perfluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CALM	Coordination and Logistic Management
CalOSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBP	Customs and Border Protection
CCAR	California Climate Action Registry
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CDP	Conceptual Drainage Plan
CEC	California Energy Commission
CEIDARS	California Emission Inventory and Reporting System
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	Chlorofluorocarbon
cfs	Cubic Feet per Second
CFR	Code of Federal Regulations
CF4	Perfluromethane
CFTP	Crossfield Taxiway Project
CGT	Commercial Ground Transportation
CH4	Methane
CHPS	Collaborative for High Performance Schools
CIDH	Cast-In-Drilled-Hole
CIP	Cast-In-Place
CLEO	Commercial Lighting Efficiency Offer
CMA	Critical Movement Analysis
CMP	Congestion Management Program
CNEL	Community Noise Equivalent Level
CNRA	California Natural Resources Agency
CO	Carbon Monoxide
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
COD	Chemical Oxygen Demand
COMPSTAT	Computer Statistical Unit
CONRAC	Consolidated Rental Car Facility

COS	Central Outfall Sewer
CPA	Community Plan Area
CPHI	California Points of Historical Interest
CPUC	California Public Utilities Commission
CRM	Cultural Resource Monitor
CSB	Customer Service Building
CTA	Central Terminal Area
CTC	County Transportation Commissions
CTR	California Toxics Rule
CUP	Central Utility Plant
CUP-RP	Central Utility Plant – Replacement Project
CWA	Clean Water Act
CWC	California Water Code
dB	Decibels
dBA	A-weighted Decibel
DDC	Direct Digital Control
DDT	Dichloro-diphenyl-trichloroethane
DEA	Drug Enforcement Administration
DMJM	Daniel, Mann, Johnson, and Mendenhall
DNL	Day Night Average Sound Level
DOD	Department of Defense
DOE	Department of Energy
DOF	Department of Finance
DPM	Diesel Particulate Matter
DS	Distribution Station
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
ECLWRF	Edward C. Little Water Recycling Facility
EDD	Employment Development Department
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELM	Energy Load Monitoring
EMC	Event Mean Concentration
EMS	Emergency Medical Service
ESA	Endangered Species Act
ETS	Environmental Tobacco Smoke
EVSE	Electric Vehicle Supply Equipment
FAA	Federal Aviation Administration
FAIA	Fellow of the American Institute of Architects
FAR	Federal Aviation Regulations
FBI	Federal Bureau of Investigation
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FTE	Full-Time Equivalent
g/mi	Grams per Mile

GBMP	Groundwater Basins Master Plan
GCASP	General Construction Activity Permit
GCC	Global Climate Change
GHG	Greenhouse Gas
GIS	Geographical Information System
gpm	Gallons Per Minute
GRP	Global Reporting Protocol
GSE	Ground Support Equipment
GTC	Ground Transportation Center
GWP	Global Warming Potential
HARP2	Hot Spots Analysis and Reporting Program Version 2
HFCs	Hydrofluorocarbons
HHRA	Human Health Risk Assessment
HI	Hazard Index
HMA	Hazardous Materials Assessment
HPT	Hyperion Treatment Plant
HQ	Hazard Quotient
HRG	Historic Resources Group
HRI	Historic Resources Inventory
HSAA	Hazardous Substance Account Act
HSR	Historic Structure Report
HVAC	Heating, ventilation, and air conditioning
HWCL	Hazardous Waste Control Law
HWTP	Hyperion Wastewater Treatment Plant
Hz	Hertz
ICE	U.S. Immigration and Customs Enforcement
ICLEI	International Council for Local Environmental Initiatives
IMC	Incident Management Center
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
IS/NOP	Initial Study/Notice of Preparation
ISO	International Organization for Standardization
ITF	Intermodal Transportation Facility
kV	Kilovolt
kW	Kilowatts
kWH	Kilowatt Hours
LAA	Los Angeles Aqueduct
LABS	City of Los Angeles Bureau of Sanitation
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sheriff’s Department
LADBS	Los Angeles Department of Building and Safety
LADD	Lifetime Average Daily Dose
LADOT	City of Los Angeles Department of Transportation

LADWP	Los Angeles Department of Water and Power
LAFC	Los Angeles Fire Code
LAFD	Los Angeles Fire Department
LAGBC	Los Angeles Green Building Code
LAHCM	Los Angeles Historic-Cultural Monument
LAHSA	Los Angeles Homeless Services Authority
LAMC	Los Angeles Municipal Code
LAMP	Landside Access Modernization Program
LAPD	Los Angeles Police Department
LAUSD	Los Angeles Unified School District
LAWA	Los Angeles World Airports
LAWAPD	LAWA Police Division
LAX	Los Angeles International Airport
LAXPD	Los Angeles International Airport Police Department
LBP	Lead-Based Paint
lbs/day	Pounds per Day
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
LEPC	Local Emergency Planning Center
Leq	Equivalent Sound Level
LGOP	Local Government Operations Protocol
Lmax	Maximum Noise Level
LID	Low Impact Development
LMID	Labor Market Information Division
LOAELs	Lowest-Observed-Adverse-Effects-Levels
LOS	Level of Service
LST	Localized Significance Threshold
LUST	Leaking Underground Storage Tank
m/s	Meters per Second
MAP	Million Annual Passengers
MAP-21	Moving Ahead for Progress in the 21st Century Act
MATES	Multiple Air Toxics Exposure Study
MBTA	Migratory Bird Treaty Act
MCM	Minimum Control Measures
MEI	Maximally Exposed Individual
MEP	Maximum Extent Practical
MERV	Minimum Efficiency Reporting Value
Metro	Los Angeles County Metropolitan Transportation Authority
mg/m3	Milligrams per Cubic Meter
MM	Mitigation Measure
MMcf	Million cubic feet
MMRP	Mitigation Monitoring and Reporting Program
MOA	Memorandum of Agreement
mpg	Miles per Gallon
mph	Miles per Hour

MPN	Most Probable Number
MPO	Metropolitan Planning Organization
MRL	Minimal risk Level
MS4	Municipal Separate Storm Sewer Systems
MSF	Maintenance and Storage Facility
MSC	Midfield Satellite Concourse
MTCO2e	Metric Tons of CO2 Equivalent
MMTCO2e	Million Metric Tons of CO2 Equivalent
MUTCD	Manual on Uniform Traffic Control Devices
MW	Megawatt
MW_{AC}	Megawatts in AC Output Capacity
MWD	Metropolitan Water District of Southern California
MWELO	Model Water Efficient Landscape Ordinance
MWH	Megawatt hours
NAAQS	National Ambient Air Quality Standards
NAF	No-added Formaldehyde
NAHC	Native American Heritage Commission
NAL	Numeric Action Level
NATA	National-Scale Air Toxics Assessment
NELA	Non-Exclusive License Agreement
NFPA	National Fire Protection Association
NHMLAC	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NOAELs	No-Observable-Adverse-Effects-Levels
N_2O	Nitrous Oxide
NOP	Notice of Preparation
NOTAM	Notice to Airmen
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NQ	Not Quantified
NRB	National Register Bulletin
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OITC	Outdoor-Indoor Transmission Class
OLM	Ozone Limiting Method
OPR	Office of Planning and Research
OPR	Owner's Project Requirements
OSHA	Occupational Safety and Health Act
PAH	Polycyclic Aromatic Hydrocarbons

Pb	Lead
PCE	Passenger Car Equivalents
PEL-TWAs	Time-Weighted Average Permissible Exposure Levels
PEM	Premium Efficiency Motors
PFCs	Perfluorocarbons
PLA	Project Labor Agreement
PM	Paleontological Monitor
PM	Particulate Matter
PM_{10}	Particulate Matter with an aerodynamic diameter less than or equal to 10 micrometers
$PM_{2.5}$	Particulate Matter with an aerodynamic diameter less than or equal to 2.5 micrometers in diameter
PMAD	Peak Month Average Day
PMTP	Paleontological Management Treatment Plan
ppm	Parts per Million
PPV	Peak Particle Velocity
PRT	Personal Rapid Transit
PST	Pacific Standard Time
PVMRM	Plume Volume Molar Ratio Method
QTA	Quick Turnaround Area
RAGS	Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RCV	Recycled Content Value
RELs	Reference Exposure Levels
RfCs	Reference Concentrations
RFM	Request for Modification
RHNA	Regional Housing Needs Assessment
RMS	Root Mean Square
RSA	Runway Safety Area
RS-N	Receiving Station "N"
RTAC	Regional Targets Advisory Committee
RTP/SCS	Regional Transportation Plan/Sustainability Communities Strategy
RWLs	Receiving Water Limits
RWQCB	Regional Water Quality Control Board
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
SDS	Safety Data Sheet
SEL	Sound Exposure Level
SERC	State Emergency Response Center
SF6	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer
SIMMOD	Airport Simulation Models

SIP	State Implementation Plan
SLF	Sacred Lands File
SMP	Stormwater Management Plan
SoCalGas	Southern California Gas Company
SO_2	Sulfur Dioxide
SO_X	Sulfur Oxides
SPAS	Specific Plan Amendment Study
sq. ft.	Square Feet
SSMP	Sewer System Management Plan
STC	Sound Transmission Class
SULEV	Super Low Emission Vehicles
SUSMP	Standard Urban Stormwater Mitigation Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TBIT	Tom Bradley International Terminal
TDM	Travel Demand Management
TIA	Transportation Impact Analysis
TDS	Total Dissolved Solids
TIC	Transportation Information Center
TKN	Total Kjedahl Nitrogen
TMA	Transportation Management Association
TMDL	Total Maximum Daily Load
TMO	Transportation Management Organization
TNC	Transportation Network Company
TNM	Traffic Noise Model
TOG	Total Organic Gases
TPSS	Traction Power Substations
TPY	Tons per Year
TSA	Transportation Security Administration
TSCA	Toxic Substances Control Act
TSR	Transportation Security Regulation
TSS	Total Suspended Solids
TVOC	Total Volatile Organic Compounds
$\mu g/m^3$	Micrograms per Cubic Meter
UFC	Uniform Fire Code
ULEF	Ultra-Low Emitting Formaldehyde
ULEV	Ultra-Low Emission Vehicles
ULSD	Ultra-Low Sulfur Diesel
UNFCCC	United Nations Framework Convention on Climate Change
UP	Unified Program
USAR	Urban Search and Rescue
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

USO	United Service Organizations
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
V/C	Volume/Capacity
VdB	Vibration Decibels
VDECS	Verified Diesel Emission Control Strategy
VFD	Variable Frequency Drives
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
VRF	Variable Refrigerant Flow
VVVF	Variable Voltage Variable Frequency
WAMA	West Aircraft Maintenance Area
WATCH	Work Area Traffic Control Handbook
WBMWD	West Basin Municipal Water District
WDR	Water Discharge Requirements
WHMP	Wildlife Hazard Management Plan
WHO	World Health Organization
WQBELs	Water Quality- Based Effluent Limitations
WRD	Water Replenishment District
WSA	Water Supply Assessment
WTCP	Worksite Traffic Control Plans
YBP	Years Before Present
ZEV	Zero Emission Vehicles
ZIMAS	Zone Info and Map Access System

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Los Angeles
World Airports